CDM

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Phibro-Tech, Inc.

January 2002
Quarterly Sampling Report
Santa Fe Springs, California

April 17, 2002

Prepared for:

Phibro-Tech, Inc. (PTI)
8851 Dice Road
Santa Fe Springs, California 90670

Prepared by:

CDM
18881 Von Karman Avenue
Suite 650
Irvine, California 92612

Project No.: 2279-11463-111.REP.REPT

CAD ... ...

PHIBRO-TECH, INC.

April 18, 2002

Ms. Rebecca Chou
California RWQCB, L.A. Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Mr. Ron Leach
USEPA, Region IX (H-4-4)
75 Hawthorne Avenue
San Francisco, CA 94105

Ms. Karen Baker
Permitting Division
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Dear Mss. Chou and Baker and Mr. Leach:

Enclosed is the January 2002 Quarterly Groundwater Monitoring Report for Phibro-Tech, Inc., Santa Fe Springs facility. The Report includes analytical results and physical measurements obtained January 15 – 18, 2002 from selected monitoring wells at Phibro-Tech. Since this Report includes portions of the RCRA Facility Investigation (USEPA Docket No. RCRA 09-89-0001), this Report will also be submitted to the EPA.

Based on a technical review by our consultant, Camp Dresser and McKee, a groundwater-monitoring program is included which was implemented beginning with the April 1991 groundwater monitoring. Additional wells and parameters changed at the request of EPA are included in this Groundwater Monitoring Report. The changes are described in the Report.

Please contact me if you have any questions or comments concerning this Report.

Sincerely,

Alonso F. Alatorre

Alonso F. Alatorre
Plant Manager

Enclosure

cc: see following page

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Section 1
Introduction

This report summarizes the January 2002 quarterly groundwater monitoring and sampling event at the Phibro-Tech, Inc. (PTI), Santa Fe Springs, California facility (formerly referred to as Southern California Chemical). This report presents the first quarter groundwater analysis for 2002. Contained herein are the results of laboratory analyses of groundwater samples and water level measurements obtained during the period of January 15 through January 17, 2002.

The purpose of this monitoring program, which began in March 1985, is to determine if compounds of concern detected in groundwater beneath the site are migrating from the facility. This is accomplished through the comparison of background or up gradient water quality and groundwater quality beneath the site. Statistically significant increases in contaminant concentrations between known areas of groundwater contamination and downgradient wells would indicate that migration is occurring. In the past, statistical analysis was performed annually and was included in the July quarterly monitoring reports. Statistical analysis is now conducted for each sampling event and is included in the corresponding monitoring report. The January 2002 statistical analysis is contained in Appendix F of this report.

To date, three types of contaminants have generally been detected in the groundwater beneath the site: soluble metals (primarily chromium and cadmium), purgeable aromatic organic compounds (toluene, ethylbenzene and total xylenes [BTEX]) and purgeable halogenated organic compounds (i.e., solvents, primarily trichloroethene [TCE]). Groundwater modeling completed in January 1993, and groundwater monitoring conducted since 1985, indicates that the purgeable aromatic plume originated up gradient from the PTI facility. The distribution of TCE appears to be ubiquitous, however, somewhat elevated concentrations exist in the vicinity of Pond 1, a RCRA-regulated former surface impoundment area. Elevated concentrations of soluble metals have also been consistently detected in the vicinity of Pond 1. Soluble metal concentrations at the down gradient property line and in deeper wells, however, continue to be negligible to non-detect.

Approximately 16 years of quarterly groundwater monitoring at the PTI facility has indicated a general lack of hexavalent chromium migration. During groundwater modeling performed by CDM in 1993, a retardation factor of 50 was selected based on the observed distribution of hexavalent chromium in the groundwater. Previous data analysis indicated that the most likely basis for the relatively high (but within the range of reasonable and appropriate values) retardation factor would be the existence of reducing conditions in the saturated zone, promoting the conversion of hexavalent chromium to trivalent chromium (Cr^{3+}). Trivalent chromium, having a very low solubility in water, would tend to precipitate and sorb to the soil, limiting migration. During four quarterly sampling events conducted in 1996, additional laboratory analyses (iron and redox potential) were performed on groundwater samples collected from wells MW-04, MW-09, and MW-14S. These additional data, along with the pH, total chromium, and hexavalent chromium data, provided a better understanding of the mechanisms controlling chromium migration in groundwater underlying the facility and supported the above hypothesis. Please refer to Section 6.4 (Chromium Fate and Transport) of the October 1996 Quarterly Sampling Report for a detailed discussion of this conclusion.

In addition to the data obtained during the January 2002 sampling, this report contains tables listing detection limits of the parameters analyzed (Appendix A). Historical sampling results for selected analytes from January 1989 to April 2001 are presented in Appendix B. Copies of the original laboratory results are included in Appendix C. Chain-of-custody records for the January 2002 sampling are included in Appendix D. Appendix E contains background groundwater concentrations of contaminants for the Santa Fe Springs area for the year 1999. Appendix F contains the complete quarterly statistical analysis.

Prior to October 1993, quarterly reports have included analytical result summary tables from all previous sampling rounds. Starting with the October 1993 quarterly report, historical water quality data tables are no longer included in the report as an appendix. Please refer to Appendix B in the July 1993 Quarterly Sampling Report for a summary of historical groundwater analytical data. A summary table of selected historical results since January 1989 is provided in Appendix B of this report.

Section 2
Monitoring Well Sampling

CDM personnel conducted groundwater-sampling activities, utilizing existing on-site monitoring wells, during the period of January 15 through January 17, 2002. Field activities were performed in general accordance with the groundwater sampling protocols as outlined in Section 4.3.3 of the approved RCRA Facility Investigation (RFI) Work Plan (CDM, June 1990). Prior to the submittal of the RFI Work Plan for regulatory agency review and approval, the J.H. Kleinfelder and Associates (Kleinfelder) Quality Assurance Project Plan (QAPP, May 1988) was used as the primary groundwater sampling guidance document. Proposed deviations from the RFI Work Plan (i.e., well purging using a submersible pump and sample collection using disposable bailers) were discussed in October 1994 correspondence to the DTSC. These changes were implemented during the October 1994 and all subsequent sampling events.

Twenty-four monitoring wells exist on-site. The locations of these wells are shown on Figure 2-1. One well, MW-06A, historically has not been sampled for groundwater analysis because it is screened in the Gage Aquifer, which is unsaturated below the PTI facility. The remaining wells are screened in the Hollydale Aquifer; 16 in the upper portion and seven in the lower portion of the aquifer.

Beginning in February 1985, Kleinfelder initiated groundwater sampling, utilizing monitoring wells MW-01 through MW-06B. Six additional wells (MW-04A and MW-07 through MW-11) were installed at the site in July 1985, thereby increasing the total number of active wells to 12. Quarterly sampling of the 12 wells was initiated in March 1986.

Commencing with the January 1989 sampling event, CDM has been responsible for all groundwater-monitoring activities at the facility. Ten wells (MW-01D, MW-06D, MW-12S, MW-12D, MW-13S, MW-13D, MW-14S, MW-14D, MW-15S and MW-15D) were installed as part of the first phase of the RFI program and were first sampled during the October 1990 sampling round.

Groundwater analysis of the 22 wells which existed during the RFI program from October 1990 to January 1991, indicated that the number of wells sampled could be reduced and yield comparable results to sampling all the wells. During sampling rounds in April, July, and October 1991, and in January 1992, 11 wells sampled. Wells screened in the upper portion of the Hollydale Aquifer included MW-01S, MW-03, MW-04, MW-07, MW-09, MW-11, MW-14S, and MW-15S, and wells screened in the lower portion of the Hollydale Aquifer included MW-01D, MW-04A, and MW-15D.

Beginning with the April 1992 sampling round, three additional wells (MW-06B, MW-06D, and MW-16) were included in the quarterly monitoring program, bringing the total number of sampled wells to 14. A new well, MW-16, constructed in March 1992 as part of the Phase II RFI program, was sampled for the first time during the April 1992 sampling round. The same 14 wells have been sampled during all subsequent sampling rounds. On several occasions, additional laboratory analyses have been performed and additional wells included in quarterly sampling, at the request of the U.S. EPA. Additional analyses and wells are noted in the comment column of Table 2-1, which summarizes the groundwater-monitoring program at the site.

In April 2000, the frequency of groundwater monitoring was reduced from quarterly to semi-annually. In April 2001, as requested by the California Department of Toxic Substances Control (DTSC), quarterly sampling was re-implemented.

The 14 wells currently included in quarterly sampling are MW-01S, MW-01D, MW-03, MW-04, MW-04A, MW-06B, MW-06D, MW-07, MW-09, MW-11, MW-14S, MW-15S, MW-15D, and MW-16. Ten shallow and four deep wells are analyzed for pH, metals (cadmium [Cd], chromium [Cr], and copper [Cu]) using EPA Method 6010A; hexavalent chromium (EPA Method 7199), and volatile organic compounds (EPA Method 8260). During the July 2001 and October 2001 sampling events, DTSC requested that wells MW-01S, MW-04, MW-09 and MW-11 be analyzed for 1,4-Dioxane. Beginning in January 2002, this analysis is no longer be required. A detailed listing of analytical parameters per sampling event is provided in Table 2-1.

The 14 on site wells were purged and sampled in the following order: MW-01S, MW-01D, MW-03, MW-15D, MW-15S, MW-06D, MW-06B, MW-14S, MW-04A, MW-04, MW-16, MW-09, MW-07, and MW-11.

2.1 Sampling Procedure

Field sampling was conducted in general accordance with procedures detailed in the RFI Work Plan. Sampling practices included the following: check for floating product and hydrocarbon vapors at each well; measure static water level and total depth of each well in order to calculate pre-sampling evacuation volumes; purge each well and collect a groundwater sample for laboratory analysis; decontaminate sampling equipment; and handle sample-filled containers in accordance with Section 4.3.3.5 of the RFI Work Plan.

2.1.1 Organic Vapor Check

Standard field procedures included checking the interior of each well with a photoionization detector (PID) (equipped with a 10.0 eV lamp) for the presence of organic vapors whenever the well casing was opened. With the sampling team members standing upwind of the well, the well cap was opened slightly, allowing for the insertion of the PID probe tip inside the well. Readings were monitored until they stabilized, which was usually at zero parts per million (ppm). The final reading, as well as the peak reading, were recorded in the field logbook. The cap was then removed and the well allowed to vent for a short period of time prior to measuring the static water level. The maximum PID readings taken during the collection of water level measurements are shown in Table 5-1 in Section 5.

2.1.2 Detection of Immiscible Layers

In order to detect the presence of floating, immiscible layers on top of the groundwater surface, a clear bailer was lowered approximately one-half the length of the bailer below the surface of the water in each well. The bailer was removed from the well and its contents checked for immiscible layers or iridescence. The bailer was decontaminated and the sampling line discarded after each use. If immiscible fluids had been detected, a sample would have been collected for laboratory analysis of purgeable halocarbons and aromatics (EPA Method 8260) and total petroleum hydrocarbons (California Department of Health Services [CA DHS] Method) using a new bailer. As in all previous quarterly groundwater sampling at the PTI facility by CDM, immiscible layers were not detected during the January 2002 sampling event.

2.1.3 Static Water Level/Well Depth Measurement

On January 15, 2002, prior to the initiation of on-site well pumping, the static water level at 23 of the 24 on-site wells was measured three times at each well location with a decontaminated electric water level indicator (sounder) and recorded. The measurements collected in the wells were identical, therefore, there was no need to collect additional measurements or average the data of these wells. The results of these measurements are shown in Table 5-1 and discussed in Section 5. One well (MW-06A) was dry, and MW-02 was not measured due to its proximity to MW-12S.

The water level in each well was also measured immediately prior to initiating well evacuation procedures for calculation of well purge volume. During measurement, the measuring (reference) point used was noted (i.e., the top of the steel casing), and the depth to water below the reference point was measured to the nearest 0.01 foot and recorded in the field log book. Wellhead elevation data was used with depth to water measurements to calculate groundwater elevation at each well location.

The total depth of each well sampled was also measured with the sounder to the nearest 0.1 foot. The amount of fill material in the bottom of the well was calculated from well construction data and noted in the logbook. Prior to first use, the sounder was calibrated and the meter response checked. The sounder probe and line were decontaminated after each use.

2.1.4 Purge Volume Determination/Well Evacuation

Saturated casing volume was calculated at each well by using the depth to water and bottom sounding measurements obtained immediately prior to purging, to calculate the amount (height) of the saturated well casing. The inside diameter of the casing was then measured, and the following formula applied:

$$\text{Volume} = \pi\ (\text{radius}^2) \times \text{height}$$

A minimum of three saturated casing volumes of water was evacuated from each well prior to collecting a groundwater sample for laboratory analysis.

During the January 2002 sampling round, all 14 of the wells currently monitored were purged using a Grundfos 2-inch diameter submersible pump, and each well was sampled using a new disposable bailer.

Field parameters were measured during well evacuation using Myron-L multimeter and Hach turbidity meter for all wells. The instruments were calibrated or field checked prior to use with standard solutions in accordance with manufacturer's directions. The meters are used to determine the stability of discharge water field parameters prior to collection of a sample for laboratory analysis.

Periodically during well evacuation, the field parameters of the discharge water were measured and recorded in the logbook. The physical appearance of the water (turbidity, color, sediment content, etc.) was also noted and recorded. Initial field turbidity measurements generally ranged from 0.2 to greater than 200 NTUs (nephelometric turbidity units) at the start of well evacuation. At the end of well evacuation, measurements were generally less than 10 NTUs. Higher turbidity at the start of purging seems to be related to agitating the water column and resuspending material from the bottom of the well during pump installation. After a minimum of three saturated casing volumes of water were evacuated from each well and the field parameters stabilized (change between readings of less than 5 to 10 percent), a sample for laboratory analysis was collected.

All purge water collected from each well was contained in a 250 gallon portable tank and then discharged directly into PTI facility's wastewater treatment system.

2.1.5 Sample Collection and Handling

Groundwater samples were collected with a new disposable bailer from the approximate middle of the perforated section, and poured directly into previously labeled sample bottles. During sample collection, the bailer was carefully and gently lowered past the air/water interface to minimize agitation and aeration of water during sample collection. The sample bottles were placed inside plastic zip-lock bags and then placed immediately into an ice-cooled chest. Prior to shipment, the bottles were cushioned with bubble wrap or plastic bags to avoid breakage. Samples collected for total metals analysis were field filtered using a 0.45-micron filter. A volume of groundwater equal to two times the capacity of the filtering device was passed through the filter and discarded prior to filtering each sample for total dissolved metals (Cd, Cu, and Cr) analysis. Filters were discarded after each use.

The January 2002 groundwater samples were collected for laboratory analysis of the following parameters:

- Volatile Organic Compounds by EPA method 8260
- Metals (Cd, Cu, and Cr)
- Hexavalent Chromium (Cr^{+6})

- pH

Groundwater sample bottles were numbered using the following format:

PTI-MW01S-050

Where:

PTI	-	designates site acronym
MW01S	-	designates sample location number (MW = Monitoring Well)
EB	-	designates equipment blank sample
TB	-	designates travel blank sample
050	-	designates sequential sample number (per sampling event)

This was the 49th round of sampling conducted by CDM, however, due to a previous labeling inconsistency, a 050 sequence number was assigned to all groundwater samples collected during this round. Sample label information included date and time of sampling, CDM sample number, and analytical parameters.

Chain-of-custody forms that indicated the label information as well as the responsible person during each step of the transportation process accompanied all filled sample containers that were collected from each well. All samples were sent by courier to Severn Trent Laboratories (STL) in Santa Ana, California on the day that they were collected, and a copy of the chain-of-custody form for that day was retained by CDM field personnel. Copies of completed chain-of-custody forms are included in Appendix C. The laboratory was notified at the time of delivery that one or more hexavalent chromium (Cr^{+6}) sample(s) were contained in the shipment to ensure that the samples would be analyzed within the prescribed 24-hour holding period.

2.2 Equipment Decontamination Procedures

The following sections describe the procedures utilized to decontaminate groundwater-sampling equipment.

2.2.1 Sampling Pump/Lines Decontamination

The submersible pump and discharge tubing used for well purging were decontaminated to reduce the possibility of cross-contamination between monitoring wells. The first step in the decontamination procedure was to submerge the pump into a 4-foot section of 4-inch diameter PVC pipe containing a soap (Alconox, a laboratory-grade detergent) and water mixture. Then, at least five gallons of the solution were pumped through the system. The pump assembly was then submerged in another section of PVC pipe filled with tap water and at least 10 gallons were pumped through the system. The final decontamination step was accomplished by submerging the pump into another section of PVC pipe containing deionized (DI) water and pumping approximately five gallons of DI water through the system.

The exterior of the pump and discharge tubing was steam cleaned, as well as the exterior of the reel holding the tubing. The decontamination of the exterior pump line was performed over a stainless steel containment basin located on the groundwater-sampling rig. The spent water was recovered and discharged into the facility's wastewater treatment system.

2.2.2 Accessory Sampling Equipment Decontamination

Accessory sampling equipment such as the metals filter apparatus and water level sounder were also decontaminated to minimize the possibility of cross-contamination between the monitoring wells. The filter apparatus and sounder were decontaminated first by washing in a bucket of soap and water, followed by a tap water rinse, followed by a final DI water rinse. Bailers used to test for an immiscible layer were decontaminated and reused. The bailers and nylon rope that were used to sample wells were discarded immediately after use.

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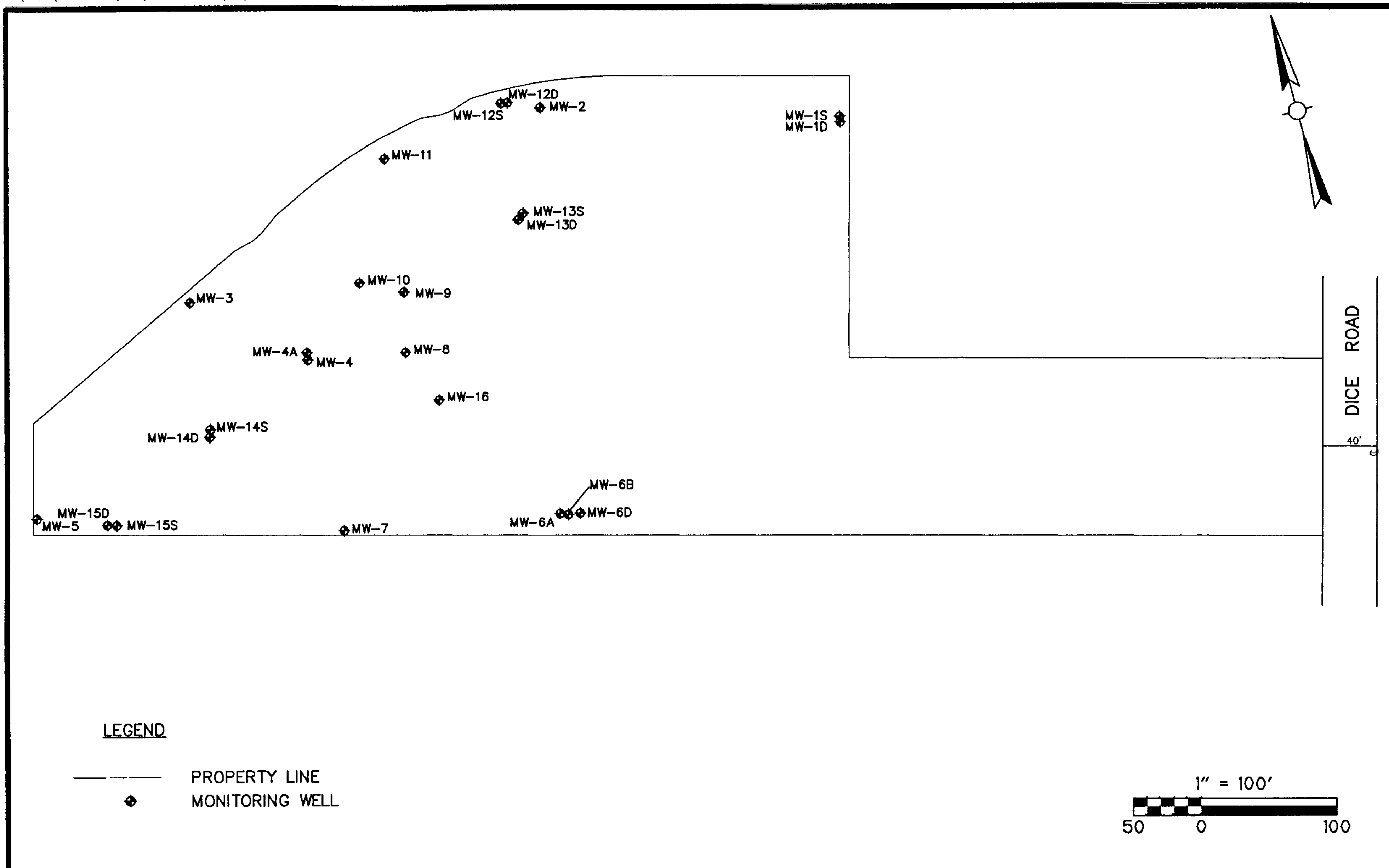


PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

CDM
environmental engineers, scientists, planners, & management consultants

MONITORING WELL LOCATION MAP

Figure 2-1

Table 2-1
PHIBRO-TECH, INC.
Groundwater Monitoring Program Summary

Sampling Event	Indicator Parameters	Trace Metals	Hexavalent Chromium	Chloride	Nitrate	Volatile Organics	Appendix IX	1,4-Dioxane	Comments
3/85	Quad	Cu & Zn	X	X	X	--	--	--	Sampled wells MW-1, 2, 3, 4, 5, & 6B. Sulfide, nickel, copper and zinc requested by DOHS and RWQCB. Also Appendix III parameters and water quality parameters (see footnote).
7/85	Quad	Cd, Cr	X	--	X	--	--	--	Sampled wells MW-4A, 7, 8, 10 and 11
3/86	Quad	Cu & Zn	X	X	X	--	--	--	Sampled 12 wells (MW1, 2, 3, 4, 4A, 5, 6B, 7, 8, 9, 10 & 11). Also Appendix III parameters and water quality parameters (see footnote).
7/86, 9/86, 12/86	Quad	Cd, Cr, Cu, Zn	X	X	X	624	--	--	Sampled all 12 wells (as previous)
3/87	Quad	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	Sampled 11 wells, not 4A
7/87, 10/87, 2/88	Quad	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	After July 1987, all 12 wells were sampled during each event
6/88	X (not Quad)	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	Performed statistical analysis (t-test) on Indicator Parameters (IPs).
9/88	--	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	IPs & volatile organics from MW1, 2, 4A, 5, 6, 7 analyzed semi-annually in June/Dec.
1/89	Quad	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	After Jan. 1989, volatile organics analyzed for all 12 wells.
4/89	--	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	
7/89	Quad	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	Performed statistical analysis of Jan. thru July 1989 data (IPs, total and hexavalent chromium).
10/89	--	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	
1/90	Quad	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	
4/90	--	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	

TABLE 2-1
PHIBRO-TECH, INC.
Groundwater Monitoring Program Summary
(continued)

Sampling Event	Indicator Parameters	Trace Metals	Hexavalent Chromium	Chloride	Nitrate	Volatile Organics	Appendix IX	1,4-Dioxane	Comments
7/90	Quad	Cd, Cr, Cu, Zn	X	X	X	601/602	--	--	Performed statistical analysis of Jan. 1989 data (IPs, total and hexavalent chromium).
10/90	--	Cd, Cr, Cu, Fe, Ni, Pb, Zn	X	X	X	601/602	X	--	Sampled 22 wells, Appendix IX parameters analyses were performed on wells 4, 4A, 6B, 6D, 12S, 12D, 15S, 15D, plus a duplicate of 4.
1/91	Quad	Cd, Cr, Cu, Fe, Ni, Pb, Zn	X	X	X	601/602	--	--	Sampled 22 wells.
4/91	pH	Cd, Cr, Cu	X	--	--	601/602	--	--	New sampling program was initiated. Sampled 11 wells including wells MW-01S, MW-01D, -03, -04, -04A, -07, -09, -11, -14S, -15S, -15D.
7/91	pH	Cd, Cr, Cu	X	--	--	601/602	--	--	Performed annual statistical analysis.
10/91	pH	Cd, Cr, Cu	X	--	--	601/602	--	--	
1/92	pH only (all) TOC only (MW-01 & -04)	Cd, Cr, Cu	X	--	Ammonia as nitrogen (MW-01 & -04)	601/602	--	--	Ammonia & TOC analyses added at MW-01S and MW-04.
4/92	pH only TOC only (MW-01 , -04, -09, -14S)	Cd, Cr, Cu-all see comments	X	--	Ammonia as nitrogen (MW-01, -04, -09, -14S)	601/602	EDB (MW-04) TPH (W-16)	--	Sampled 14 wells including Wells MW-01S, -01D, -03, -04, -04A, -06B, -06D, -07, -09, -11, -14S, -15S, -15D, -16. Additional analysis as part of Phase II RFI; unfiltered metals on MW-04S and -14S. Pb and Ni on wells 1, 4, 14S, 15S, 16; Fe, Zn on well 16.
7/92	pH	Cd, Cr, Cu	X	--	--	601/602	--	--	Sampled 14 wells. Performed annual statistical analysis.
10/92	pH	Cd, Cr, Cu	X	--	--	601/602	--	--	Sampled 14 wells.

TABLE 2-1
PHIBRO-TECH, INC.
Groundwater Monitoring Program Summary
(continued)

Sampling Event	Indicator Parameters	Trace Metals	Hexavalent Chromium	Chloride	Nitrate	Volatile Organics	Appendix IX	1,4-Dioxane	Comments
1/93, 4/93	pH	Cd, Cr, Cu	X	--	--	8010/8020	--	--	Sampled 14 wells.
7/93	pH	Cd, Cr, Cu	X	--	--	8010/8020 (TVPH, TEPH)	--	--	Sampled 15 wells. (MW-13S was added) TVPH and TEPH analysis on MW-09, 13S, and 16 only. Performed annual statistical analysis.
10/93	pH	Cd, Cr, Cu	X	--	--	8010/8020	--	--	Sampled 15 wells (MW-13S not analyzed for metals and pH) TVPH & TEPH analysis on MW-04, 07, 09, 13S, and 16 only. Performed statistical analysis.
1/94, 4/94	pH	Cd, Cr, Cu	X	--	--	8010/8020	--	--	Sampled 14 wells Performed statistical analysis.
7/94	pH	Cd, Cr, Cu	X	See comment	--	8010/8020	--	--	Sampled 14 wells, chloride and sulfate analyses on MW-04, MW-09, MW-14S, MW-15S, MW-15D, and MW-16. Performed statistical analysis
10/94, 1/95, 4/95, 7/95, 10/95	pH	Cd, Cr, Cu	X	--	--	8010/8020	--	--	Sampled 14 wells Performed statistical analysis.
1/96	pH	Cd, Cr, Cu	X	--	--	8010/8020	--	--	Sampled 14 wells Performed statistical analysis. 1995 Annual Report included as Appendix F.
4/96, 7/96	pH	Cd, Cr, Cu	X	--	--	8010/8020	--	--	Sampled 14 wells Performed statistical analysis.

TABLE 2-1
PHIBRO-TECH, INC.
Groundwater Monitoring Program Summary
(continued)

Sampling Event	Indicator Parameters	Trace Metals	Hexavalent Chromium	Chloride	Nitrate	Volatile Organics	Appendix IX	1,4-Dioxane	Comments
10/96	pH	Cd, Cr, Cu	X	--	--	8010/ 8020	--	--	Sampled 14 wells Performed statistical analysis. 1996 Annual Report included as Appendix F.
1/97	pH	Cd, Cr, Cu	X	--	--	8260, MTBE	--	--	Sampled 14 wells Performed statistical analysis.
4/97, 7/97	pH	Cd, Cr, Cu	X	--	--	8260	--	--	Sampled 14 wells Performed statistical analysis.
10/97	pH	Cd, Cr, Cu	X	--	--	8260	--	--	Sampled 14 wells Performed statistical analysis. 1997 Annual Report included as Appendix F.
1/98	pH	Cd, Cr, Cu	X	--	--	8260	--	--	Sampled 14 wells Performed statistical analysis. Hexavalent Chromium by Method 7196 in all wells; and by Method 218.6 in wells MW-4A, MW-14S, MW-15S, and MW-15D.
4/98, 7/98	pH	Cd, Cr, Cu	X	--	--	8260	--	--	Sampled 14 wells Performed statistical analysis.
10/98	pH	Cd, Cr, Cu	X	--	--	8260	--	--	Sampled 14 wells Performed statistical analysis. 1998 Annual Report included as Appendix F.
1/99, 4/99, 7/99, 10/99, 01/00, 04/00, 10/00, 04/01	pH	Cd,Cr,Cu	X*	--	--	8260	_	--	Sampled 14 wells Performed statistical analysis. Monitoring and reporting frequency changed from quarterly to semi-annually in April 2000. Monitoring and reporting frequency changed back from semi-annually to quarterly in April 2001.

TABLE 2-1
PHIBRO-TECH, INC.
Groundwater Monitoring Program Summary
(continued)

Sampling Event	Indicator Parameters	Trace Metals	Hexavalent Chromium	Chloride	Nitrate	Volatile Organics	Appendix IX	1,4-Dioxane	Comments
07/01, 10/01	pH	Cd,Cr,Cu	X*	--	--	8260	_	MW-015 MW-04 MW-09 MW-11 MW-06D MW-15D	Sampled 14 wells Performed statistical analysis. 2001 Annual Report included as Appendix G (10/01) 1,4-Dioxane sampled in selected wells (MW-01S, MW-04, MW-04A, MW-06D, MW-11, and MW-15D) during 07/01 and 10/01.
1/02	PH	Cd,Cr, Cu	X	-	-	8260	-	-	Sampled 14 wells Performed statistical analysis.

Appendix III Parameters - As, Ba, Cd, Cr, F, Pb, Hg, N, Se, Ag, Endrin, Lindane, Methoxychlor, Toxaphene, 2,4-D, 2,4,5-TP (Silvex), Radium, Gross Alpha & Beta, Turbidity, coliform bacteria.
Water Quality Parameters - Cl, Fe, Mn, Phenols, Na, SO4
Indicator Parameters (IP) - TOX, TOC, pH, EC (quadruplicate)
624 - Volatile organics analysis
601/602 - Purgeable halocarbons/aromatics analysis
8010/8020 - Purgeable halocarbons/aromatic analysis
8260 - Purgeable halocarbons/aromatic analysis
MTBE - Methyl tertiary butyl ether
Appendix IX Parameters - See Appendix F in the October 1990 Quarterly Sampling Report for a complete listing of parameters.
* - Analytical method changed from EPA 7196 to 7199 beginning with the October 2000 Sampling Event

Section 3
Laboratory Testing

STL of Santa Ana, California Ana provided Analytical testing of the 21-groundwater samples collected during the January 2002 monitoring event. Fourteen monitoring well samples, two blind duplicate samples from MW-04 and MW-09, and one DI sample were collected and submitted to STL for analysis of purgeable halocarbons/aromatics (EPA Method 8260), cadmium, total and hexavalent chromium, copper, and pH. In addition, three equipment blank samples (EB) were submitted for analysis of the above parameters. One travel blank (TB) was also submitted to STL for analysis of purgeable halogenated/aromatic organics.

The January 2002 groundwater analytical results are discussed in Section 6 and summarized in Tables 6-1 and 6-2. Quality assurance analytical results (duplicates, equipment blanks, and travel blanks) are discussed in Section 4.0 and summarized in Table 4-1. Individual analytical reports for January 2002 are contained in Appendix C.

Section 4
Quality Assurance

To verify the accuracy and validity of analytical data, certain quality assurance procedures were implemented. The field and laboratory quality assurance results were checked for deviations from the Quality Assurance (QA) guidelines discussed in the RFI Work Plan.

4.1 Field Quality Assurance

The field QA procedures included the use of duplicate samples, equipment blanks, travel blanks, and the use of chain-of-custody forms. The results of the QA analyses have been compiled in Table 4-1. Detection limits of parameters analyzed are shown in the analytical reports contained in Appendix C. Relative Percent Difference (RPD) between original and duplicate samples are also listed in Table 4-1.

4.1.1 Duplicate Samples

Standard accepted practice is to submit one duplicate sample for analysis for approximately every tenth sample collected; a ratio of 1 to 10. During the January 2002 round of sampling, duplicate samples were collected from monitoring wells MW-04 and MW-09. The duplicate samples were submitted to the analytical laboratory as blind samples, and were designated MW-35 and MW-37, respectively, on the chain of custody forms. Monitoring wells MW-04 and MW-09 were selected due to elevated concentrations of certain contaminants detected during previous sampling rounds. Analytical results for the duplicate samples for January 2002 are shown in Table 4-1.

One set of duplicate results indicated a RPD that greater than 20% (Table 4-1). Laboratory results for the samples collected from well MW-04 indicated the original sample concentration of total chromium deviated from the duplicate sample concentration by 25.4%. However, the concentrations are well within the same order of magnitude. No other deviation greater than 20% was found in any of the duplicate samples.

4.1.2 Equipment Blanks

Analytical results for the equipment blanks collected during January 2002 are shown in Table 4-1.

Equipment blank EB-01 was obtained by allowing deionized water to run through a new, precleaned, disposable bailer after sampling MW-1S. The purpose of this equipment blank was to evaluate and ensure the effectiveness of factory cleaning of the disposable bailer. Insufficient deionized water was available at the time of sampling EB-01, therefore, VOC analysis was not performed. Equipment blanks EB-02 and EB-03 were obtained by pouring deionized water over the submersible pump after decontamination. The samples were collected in the appropriate containers and submitted for laboratory analysis. Sample EB-02 was collected following pump decontamination after sampling well MW-14S, and EB-03 after sampling well MW-7. The equipment blanks were submitted to the laboratory for analysis of volatile organic compounds (EPA Method 8260), cadmium, chromium (total and hexavalent), copper, and pH. The analytical results did not indicate any compound above the method detection limits in the equipment blanks. The laboratory provided water used for the collection of the equipment blanks.

4.1.3 Travel Blanks

The detection of compounds in travel blanks is generally indicative of systematic contamination from sample transport, laboratory glassware cleaning, laboratory storage, or analytical procedures. During the January 2002 sampling event, one laboratory-prepared travel blank (TB01) consisting of organic-free water was labeled and submitted to the laboratory for volatile organic compound analysis by EPA Method 8260. The travel blanks was placed inside the cooler containing samples for volatile organic compounds.

Table 4-1 shows the results of the travel blank analyses. No compounds were detected above the method detection limits.

4.1.4 Sample Control

All sample containers were labeled immediately prior to sampling with the sample identification information completed with a waterproof pen. Samples were transported under chain-of-custody and hand delivered by courier to the laboratory in ice-cooled chests. Copies of the chain-of-custody records are included in Appendix C.

4.2 Laboratory Quality Assurance

STL provides internal laboratory QA/QC results with each sample analytical report. Matrix spike, matrix spike duplicate, method blank, and duplicate control sample results are noted in the QA/QC reports. In addition, surrogate recoveries are also noted for volatile organics analyses. The laboratory QA/QC results were within acceptable limits for the January 2002 sampling. The laboratory control sample results were also within acceptable limits.

Table 4-1
Phibro-Tech, Inc.
Groundwater Analytical Results - January 2002
Field Quality Control Sample Analytical Summary

Well ID	Sample Date	Sample Type	Metals (mg/L)				VOCs (ug/L)											
			Cadmium	Chromium	Cr+6	Copper	Benzene	Toluene	Ethyl-benzene	Xylenes, Total	PCE	TCE	1,1-DCE	1,1-DCA	1,2-DCA	CFM	cis-1,2-DCE	MCL
MW-04	01/17/2002		0.41	24.4	18	0.05 U	10 U	10 U	680	10 U	10 U	130	31	55	160	10 U	63	20
		K	0.35	18.9	18	0.025 U	10 U	10 U	720	10 U	10 U	140	32	58	160	10 U	70	24
		RPD	15.8 %	25.4 %	0 %				5.7 %			7.4 %	3.2 %	5.3 %	0 %		10.5 %	18.2 %
MW-09	01/17/2002		0.005 U	0.16	0.28	0.025 U	2.5 U	2.5 U	2.5 U	2.5 U	4.4	200	43	89	140	35	5.3	14
		K	0.005 U	0.15	0.23	0.025 U	2.5 U	2.5 U	2.5 U	2.5 U	4.2	200	44	91	150	36	5.3	15
		RPD		6.5 %	19.6 %						4.7 %	0 %	2.3 %	2.2 %	6.9 %	2.8 %	0 %	6.9 %
DI	01/16/2002	N	0.005 U	0.01 U	0.01 U	0.025 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
EB	01/15/2002	N	0.005 U	0.01 U	0.002 U	0.025 U												
	01/16/2002	N	0.005 U	0.01 U	0.01 U	0.025 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	01/17/2002	N	0.005 U	0.01 U	0.002 U	0.025 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB	01/15/2002	N					1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

PCE = Tetrachloroethene; TCE = Trichloroethene; DCE = Dichloroethene; DCA = Dichloroethane; CFM = Chloroform; MCL = Methylene chloride.

U = Not detected at a concentration greater than the reporting limit shown.

Sample Type:
K = Duplicate (split) Sample
TB = Trip Blank
N = Equipment Decontamination Blank
RPD = Relative Percent Difference between original and duplicate samples (%)

Section 5
Groundwater Elevation

On January 15, 2002 prior to the initiation of well evacuation procedures, the depth to groundwater was measured in 23 of the 24 on-site monitoring wells. Groundwater elevations were calculated by subtracting the depth to static water level from the surveyed elevation of the corresponding monitoring well.

All of the monitoring well casing elevations were surveyed during the RFI and three wells (MW-04, MW-09, and MW-10) were resurveyed in January 1996 following wellhead repair. In July 1998, wellhead repairs were performed on wells MW-03, MW-06A, MW-06B, MW-06D, MW-08, MW-11, MW-12S, MW-12D, MW-13S, MW-13D, and MW-16. These wells were resurveyed during the July 1998 monitoring event. During the April 2000 monitoring event, two additional wellheads were repaired (MW-14S and MW-14D). Wells MW-14S and MW-14D were resurveyed during September 2001.

During the January 2002 groundwater-sampling round, water level measurements were taken at shallow wells MW-01S, MW-03, MW-04, MW-05, MW-06B, MW-07, MW-08, MW-09, MW-10, MW-11, MW-12S, MW-13S, MW-14S, MW-15S, and MW-16. Water level measurements were also taken at deep wells MW-01D, MW-04A, MW-06D, MW-12D, MW-13D, MW-14D, and MW-15D. These wells were measured in order to evaluate the direction and gradient of groundwater flow underlying the facility and to help characterize the shallow and deep aquifer interaction.
Well MW-02 was not measured due to its proximity to MW-12S. Well MW-06A was measured and found to be dry.

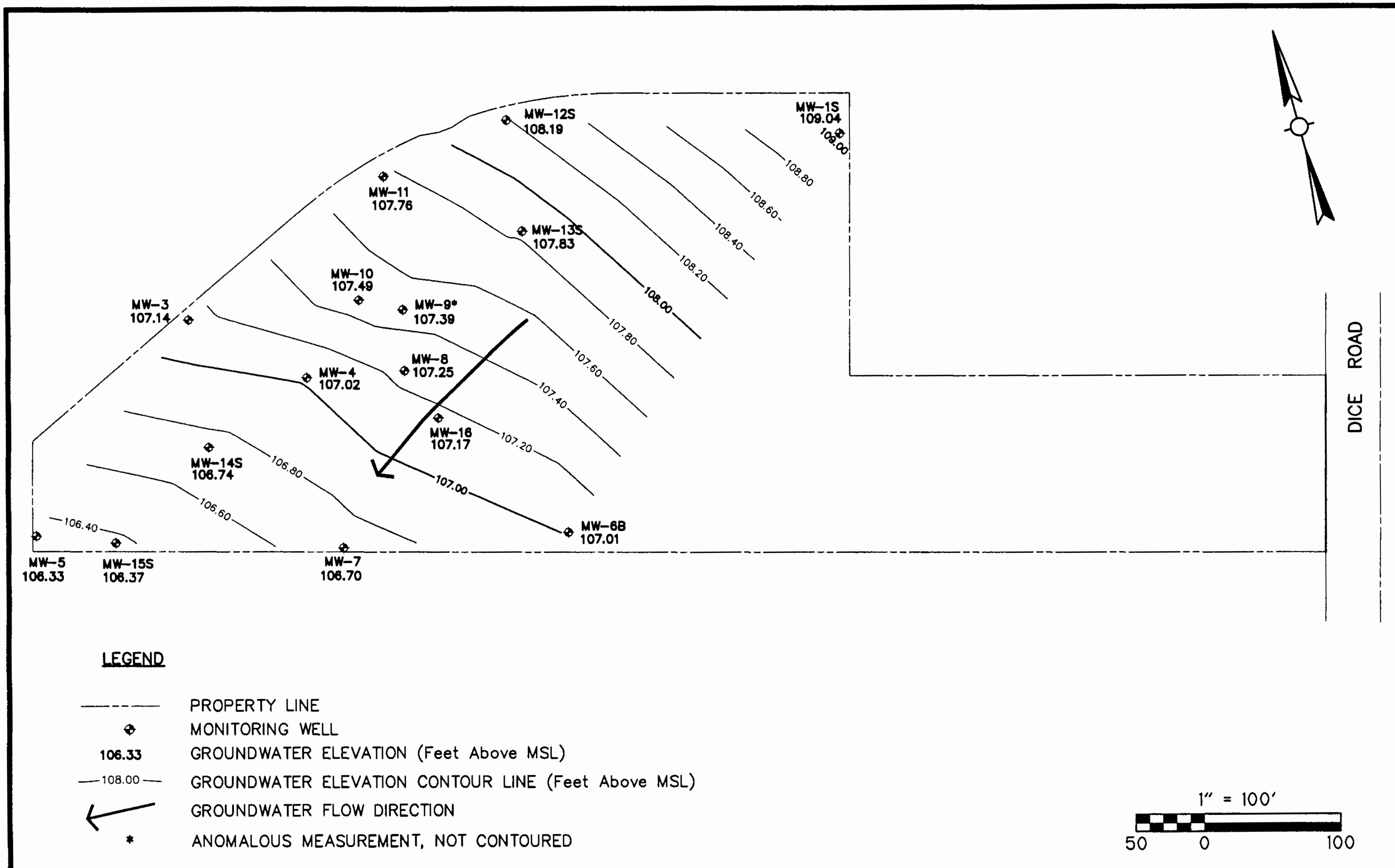
Table 5-1 lists the depths to water and groundwater elevations for each well sampled. Figure 5-1 shows the approximate groundwater surface elevation of the upper Hollydale Aquifer for wells screened in the shallow interval (45 to 77 feet below ground surface) using data collected during the January 2002 sampling round. The contours shown in Figures 5-1 and 5-2 were generated by D.C.A., a surface contouring software developed by Softdisk, which is commonly used in conjunction with CADD (Computer Aided Drafting and Design) to produce contour maps and other graphics.

The direction of groundwater flow in the shallow monitoring wells is approximately southwest at an average gradient of 0.39 feet per 100 feet in the western portion of the facility, where the majority of the monitoring wells are located. The gradient in the shallow wells is comparable to the October 2001 sampling event which had a gradient of 0.38 feet per 100 feet.

Figure 5-2 shows the approximate groundwater elevation of the lower Hollydale Aquifer for wells screened in the deeper interval (78.3 to 123.5 feet below ground surface). Groundwater contours for the deeper wells follow the same general trend as those of the shallow wells, with a direction of groundwater flow towards the southwest at an average gradient of 0.42 feet per 100 feet.

With the 23 wells measured for water levels during the January 2002 sampling round, there were seven locations where a deep well was measured adjacent to a shallow well. Shallow wells are screened within the interval of 45 to 77 feet bgs. Deep wells are screened within the interval of 78.3 to 107 feet bgs, with the exception of MW-15D, which is screened from 108.5 to 123.5 feet bgs. Of the well pairs, groundwater elevations at deep wells MW-01D, MW-12D, MW-13D, and MW-15D were slightly lower (0.03 feet to 0.07 feet) than the corresponding shallow well elevations. The groundwater elevations at deep wells MW-4A, MW-6D, and MW-14D were slightly higher (0.06 feet to 0.60 feet) than the corresponding shallow well elevations. Based on these and past groundwater elevation comparisons among shallow and deep well pairs, it does not appear that a well-defined vertical gradient between shallow and deep intervals exists.

Average groundwater elevations during the January 2002 sampling event increased from the previous sampling event in October 2001. Groundwater elevations increased by an average of 1.12 feet and ranged from a minimum increase of 0.19 feet at well MW-16 to a maximum increase of 1.61 feet at well MW-01S.



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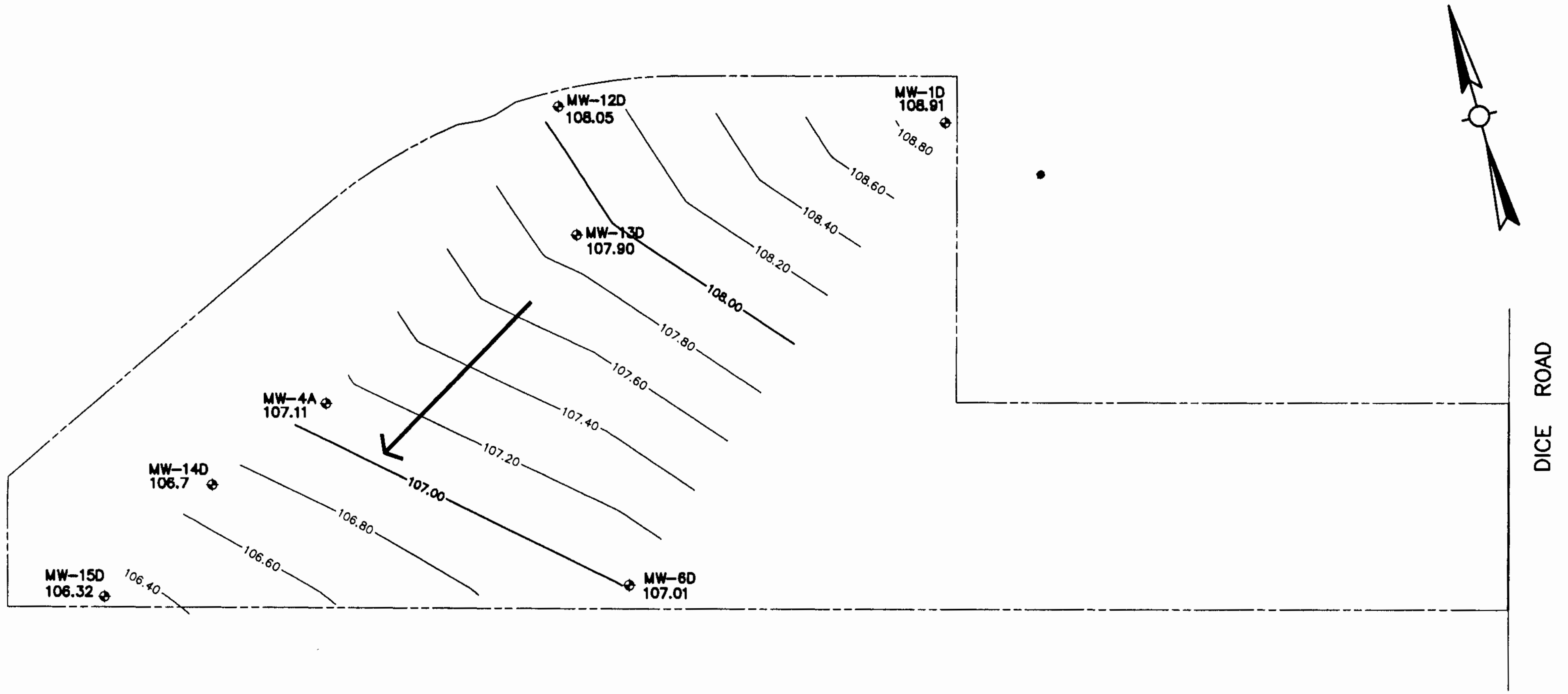
PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Groundwater Elevation Contours - Shallow Wells
January 2002

CDM

Figure 5-1



LEGEND

PROPERTY LINE
MONITORING WELL
106.32 GROUNDWATER ELEVATION (Feet Above MSL)
108.00 GROUNDWATER ELEVATION CONTOUR LINE (Feet Above MSL)
GROUNDWATER FLOW DIRECTION

1" = 100'
50 0 100

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PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Groundwater Elevation Contours - Deep Wells
January 2002

CDM

Figure 5-2

TABLE 5-1
PHIBRO-TECH, INC.
January 2002 Quarterly Monitoring Well Sampling
Groundwater Elevation Data

Well No.	Well Headspace* (ppm)	Total Depth Constructed (ft) (bgs)	Total Depth Measured (ft) (bgs)	Perforated Intervals (ft)	Calculated Casing Fill (ft)	M.P. Elevation (ft)	Depth to Water (ft below MP)	Groundwater Elevation (ft above MSL) January 2002	Groundwater Elevation (ft above MSL) October 2001
1S	-- / --	62.5	62.3	47-62.5	0.2	152.63	43.59	109.04	107.43
1D	-- / --	94.8	95.7	79.5-94.5	---	152.60	43.69	108.91	107.39
3	0.0 / 0.0	74.1	76.0	45-75	---	154.75	47.61	107.14	105.81
4	2.3 / 0.0	67.5	70.3	45-75	---	152.37	45.35	107.02	105.69
4A	2.5 / 0.0	107.0	108.2	87-107	---	152.46	45.35	107.11	105.91
5	-- / -	75.0	73.0	45-75	2.0	153.26	46.93	106.33	105.21
6A	-- / --	---	---	10-30	---	---	---	Dry	Dry
6B	0.2 / 0.0	77.6	76.3	45-75	1.3	149.53	42.52	107.01	106.06
6D	0.0 / 0.0	95.5	92.3	79-94	3.2	150.13	43.12	107.01	106.09
7	0.7 / 0.0	71.5	71.0	45-75	0.5	149.42	42.72	106.70	105.64
8	-- / --	71.0	70.1	41-71	0.9	150.17	42.92	107.25	106.09
9	0.6 / 0.0	73.5	75.3	44-77	---	152.96	45.57	107.39	106.21
10	-- / --	75.0	76.1	45-75	---	153.89	46.40	107.49	---
11	0.0 / 0.0	75.5	76.8	55-75	---	155.76	48.00	107.76	106.42
12S	-- / --	72.0	74.4	51-72	---	155.79	47.60	108.19	107.54
12D	-- / --	101.0	102.6	84.5-100	---	155.72	47.67	108.05	107.39
13S	-- / --	70.3	69.0	50.3-70.3	1.3	151.72	43.89	107.83	106.61
13D	-- / --	93.3	93.4	78.3-93.3	---	151.68	43.78	107.90	106.58
14S	2.6 / 0.0	71.5	70.6	46-72	0.9	150.54	43.80	106.74	105.54
14D	-- / --	109.0	---	88-103	---	150.60	43.90	106.70	105.53
15S	0.0 / 0.0	71.5	71.2	51.5-71.5	0.3	151.01	44.64	106.37	105.27
15D	0.0 / 0.0	123.8	124.5	108.5-123.5	---	150.96	44.64	106.32	105.08
16	0.6 / 0.0	62.5	62.2	42-62	0.3	150.27	43.10	107.17	105.98

M.P. = Measuring point (top of steel casing)
--- = Not measured or not calculated.
bgs = below ground surface
ppm = parts per million

MSL = mean sea level
* Measured with PID prior to sampling (casing/background), 10 wells not measured due to PID malfunction.
Note: Depth to water measurements collected on January 15, 2002 prior to purging/sampling on-site wells.

Section 6
Groundwater Quality

In order to compare the analytical data with the previous sampling events (1989 through April 2001 quarterly events), historical sampling results were compiled and presented in Appendix B. These two tables present groundwater analytical parameters (hexavalent and total chromium, cadmium, copper, purgeable aromatics and trichloroethene), and groundwater elevations at shallow-well and deep-well locations, which were sampled prior to July 2001. Laboratory analytical reports from all wells sampled during the January 2002 sampling round are located in Appendix C.

Consistent with the results of laboratory testing performed on the groundwater samples collected since January 1989 from the on-site monitoring wells, three contaminant plumes in the Hollydale Aquifer were identified. Historically, these plumes have been present at varying concentrations and lateral extent. One small plume, consisting primarily of chromium, has been aligned in a northeasterly to southwesterly direction in the vicinity of wells MW-04 and MW-14S. The second, consisting of purgeable aromatics, has also been aligned in a northeasterly to southwesterly direction with the highest concentrations generally found in wells MW-04, MW-14S, and MW-09. The third plume consists of TCE and related parameters with highest concentrations generally detected in wells MW-04, MW-09, MW-11, and MW-14S.

6.1 Halogenated Volatile Organic Compounds

Table 6-1 shows the analytical results for deep and shallow wells sampled during January 2002. TCE was the primary compound detected, with miscellaneous other halogenated organics also detected. The table also shows, for comparison purposes, maximum contaminant limits (MCLs) and concentrations for water supply wells in the Santa Fe Springs area. The supply wells, however, are likely screened much deeper than the wells at PTI. The City of Santa Fe Springs Annual Water Quality Report for 1999 (the most recent report available) is contained in Appendix E of this document.

Trichloroethene (TCE)

TCE was detected in all 14 of the groundwater monitoring wells sampled. The highest concentration of TCE detected was 630 μg/L in well MW-11, a decrease from the result of 1,500 μg/L in October 2001. Analyses of samples from three previous consecutive sampling events (April 2000, October 2000 and April 2001) indicated all time highs for this well, which is located along the northern boundary of the site. The TCE detected in well MW-11 likely originated from an off-site upgradient source. The second highest concentration of TCE detected was 220 μg/L in well MW-03, a decrease from the result of 290 μg/L in October 2001. Of the 14 wells sampled, ten wells contained concentrations of TCE that exceeded the MCL of 5 μg/L.

Concentrations of TCE detected in shallow and deep wells are shown on Figures 6-1 and 6-2, respectively. Compared to October 2001, TCE concentrations decreased in nine of the ten shallow wells sampled. Excluding MW-11 and MW-03, TCE concentrations ranged from 2.7 μg/L (MW-15S) to 200 μg/L (MW-09). The only shallow well that had an increase in TCE concentration compared to October 2001 was MW-6B, which increased slightly from 4.6 to 5.1 μg/L.

TCE concentrations decreased in all of the four deep wells sampled, compared with the October 2001 results. Deep-well TCE concentrations ranged from 1.8 μg/L to 6.6 μg/L in January 2002.

A review of the historical analytical results contained in Appendix B reveals that, with minor exceptions, TCE has historically been detected in all on-site monitoring wells, including the upgradient wells. Past discussions with Department of Health Services (now Cal EPA DTSC) and Regional Water Quality Control Board staff indicate that TCE and other halogenated organic are generally recognized as regional groundwater contaminants.

Other Halogenated Organics

During the January 2002 sampling, other halogenated organics were detected in most of the on-site wells (Table 6-1). Halogenated organics detected in January 2002 other than TCE included 1,1-dichloroethane (1,1-DCA), 1,2-DCA, 1,1,1-trichloroethane (1,1,1-TCA), tetrachloroethene (PCE), carbon tetrachloride, cis-1,2-dichloroethene (cis-1,2-DCE), chloroform, and methylene chloride. Wells with significant concentrations of halogenated organic compounds included MW-04, MW-07, MW-09, MW-11, and MW15S.

1,1-DCA was detected in six of the wells sampled, with concentrations ranging from 8.7 μg /l in MW-7 to 120 μg/L in MW-11. The MCL for 1,1-DCA is 5 μg/L. Compared with October 2001, concentrations of 1,1-DCA decreased in all wells that had detectable concentrations.

1,2-DCA was also present above reporting limits in six of the sampled wells, with concentrations ranging from 1.3 μg /l in MW-1S to 150 μg/L in MW-09 and 160 μg/L in MW-04. The MCL for 1,2-DCA is 0.5 μg/L.

Detectable concentrations of cis-1,2-DCE occurred in six of the wells sampled in January 2002. Overall, concentrations ranged from 1.2 μg /l in MW-1S to 70 μg/L in MW-04. The MCL for cis-1,2-DCE is 6 μg/L.

The compounds PCE, 1,1,1-TCA, carbon tetrachloride, chloroform and methylene chloride were also detected in several wells. Detections of these other halogenated organic compounds are assumed to be related to the TCE plume.

6.2 Aromatic Volatile Organic Compounds

According to PTI personnel, organic chemicals have not historically been used on-site in any of the production processes. Two 10,000-gallon underground storage tanks (diesel and gasoline), however, were located in the approximate center of the facility, due east of the drum wash area. During tank removal operations in July 1989, petroleum hydrocarbon contamination was discovered in the tank excavation. The RFI report indicated that petroleum hydrocarbon contamination was not detected at depths below 30 feet near the former tank locations. Although they have not been used on-site, aromatic compounds have been historically detected in groundwater underlying the facility. The primary aromatic organic compounds of concern are toluene, ethylbenzene and total xylenes, which vary in both concentration and lateral extent. The RFI report indicated that these compounds appeared to be migrating onto the subject property from the property to the north. According to Los Angeles County Department of Public Works files, leaks from tanks containing purgeable aromatic compounds with subsequent groundwater contamination are known to have occurred at the property to the north of PTI.

Aromatic volatile organic compound results for January 2002 are presented in Table 6-1. Concentrations of total aromatics (BTEX) for the shallow wells are illustrated on Figure 6-3. Historic sampling results indicate that purgeable aromatic contamination originated off-site to the north and has migrated onto the subject property. During previous sampling events, elevated concentrations of toluene, ethylbenzene and xylenes were detected in MW-11 and MW-3 along the northern perimeter of the property.

Since approximately July 1991, elevated concentrations of these compounds have been detected in well MW-04 and MW14S, indicating that the plume may be migrating down gradient. Total BTEX concentrations in MW-04 began to gradually decrease in October 1998 until January 2000, at which time MW-04 had a total BTEX concentration of 11.1 $\mu g/L$. Concentrations began to increase in October 2000 until October 2001, when the total BTEX reached 6,500 $\mu g/L$. January 2002 results indicate that total BTEX concentrations in MW-04 have again decreased to 680 $\mu g/L$.

In addition, high concentrations have also been detected in well MW-09 beginning in January 1992. Ethylbenzene was detected at a concentration of 440 $\mu g/L$ in MW-09 in July 2001 and 8.1 $\mu g/L$ in October 2001. All BTEX compounds were below reporting limits in January 2002.

The results of the January 2002 sampling indicate that the highest concentrations of total BTEX were detected in MW-14S (Figure 6-3) at a concentration of 3,800 $\mu g/L$. These results indicate a increase of one order-of-magnitude compared with previous results. The second highest total BTEX concentration of 2,461 $\mu g/L$ was detected in well MW-09, also representing a one order-of-magnitude increase.

Benzene

Benzene was not detected above the reporting limit in any of the 14 wells sampled. In October 2001, benzene was detected in MW-15D at a concentration of 2.2 µg/L. Historical evidence indicates that benzene is not a contaminant of concern for the facility.

Toluene

During the January 2002 sampling, toluene was detected in one well, MW-11, at a concentration of 31 µg/L. In October 2001, toluene was not detected above the reporting limit in any of the 14 wells sampled.

Significant toluene concentrations were detected during July 1990 to July 1991 (MW-11), July 1991 to January 1992 (MW-04), July 1992 to July 1993 (MW-09), and July 1994 to January 1995 (MW-09). Concentrations were also detected at location MW-04 during January 1993. Elevated ethylbenzene and total xylene concentrations are generally associated with elevated toluene concentrations.

Ethylbenzene

During the January 2002 sampling round, ethylbenzene was detected at concentrations greater than the reporting limit in MW-04, MW-11, and MW-14S. The highest concentration of ethylbenzene (2,700 µg/L) was detected in MW-14S, which was a increase from 2.4 µg/L in October 2001. The second highest concentration of ethylbenzene (1,900 µg/L) was detected in MW-11. Results for MW-11 from October 2001 sampling event indicated an ethylbenzene concentration of 90 µg/L. Since the last sampling event in October 2001, ethylbenzene concentrations have decreased in wells MW-04, MW-09, and MW-16, and have increased in wells MW-11 and MW-14S.

Total Xylenes

Total xylenes were detected above the reporting limit in only two wells during the January 2002 sampling event. In wells MW-11 and MW-14S, concentrations of total xylenes were 530 and 1100 µg/L, respectively. Previous sampling event results from October 2001 indicated only wells MW-01D and MW-11 contained detectable xylenes at concentrations of 1.5 and 122 µg/L, respectively.

6.3 1,4-Dioxane

Table 6-1 shows the analytical results for 1,4-Dioxane during the July and October 2001 sampling events. Groundwater samples from wells MW-01S, MW-04, MW-06D, MW-09, MW-11 and MW-15D were analyzed for 1,4-Dioxane. The highest concentration (130 µg/L) was detected in MW-01S which represents the site's shallow upgradient well. 1,4-Dioxane analysis was not performed during the January 2002 sampling event.

6.4 Inorganic and Miscellaneous Parameters

Table 6-2 shows the analytical results for inorganic parameters (cadmium, total and hexavalent chromium, copper, and pH) during the January 2002 sampling event.

Hexavalent Chromium (Cr^{+6})

During the January 2002 sampling, hexavalent chromium was analyzed using EPA Method 7199 with a method detection limit of 0.002 mg/L and a reporting limit of 0.002 mg/L. Prior to the April 2001 sampling event, hexavalent chromium was analyzed using EPA Method 7196 with a reporting limit of 0.02 mg/L.

Hexavalent chromium was detected in 7 of the 14 wells sampled. Well MW-04 contained the highest concentration of hexavalent chromium at 18 mg/L. During the October 2001 sampling event, the same well contained the highest concentration. The remaining six wells contained hexavalent chromium concentrations that ranged from 0.0051 mg/L (MW-6B) to 0.28 mg/L (MW-9) during January 2002. Figure 6-4 shows the concentrations of hexavalent chromium detected in the shallow wells during the January 2002 sampling event.

The water purged from MW-04 has typically been bright yellow in color since CDM began sampling the wells on a quarterly basis in January 1989. During the January 2002 sampling round, the color of water from MW-04 was again noted as yellow.

Figure 6-5 shows the concentrations of hexavalent chromium and groundwater elevations in MW-04 over time. The concentrations of hexavalent chromium at MW-04 decreased from July 1989 (120 mg/L) to July 1993 (1.8 mg/L), while groundwater elevations increased. Since July 1993, hexavalent chromium concentrations have fluctuated up and down while groundwater elevations have remained fairly constant. Historically, hexavalent chromium has been detected (detection limit was 0.02 mg/L) in four other wells other than MW-04, although the highest concentration has always been detected at MW-04.

At MW-14S from October 1990 to January 1993, hexavalent chromium concentrations generally decreased, with analytical non-detections reported for the six sampling rounds before October 1994. Since October 1994, detections have been sporadic, ranging from 0.022 to 0.11 mg/L during 15 of the last 28 sampling events.

Hexavalent chromium concentrations decreased in MW-09 between October 1989 and January 1991. Then between January 1992 and July 1998 hexavalent chromium concentrations were not detected above the reported detection limits (except for a trace amount detected in October 1991). Between October 1998 and January 2002, seven of the twelve sampling events indicated detectable concentrations of hexavalent chromium.

Total Chromium (Cr[T])

Total chromium was detected above the reporting limit in four monitoring wells during the January 2002 sampling event. The highest concentration was detected in well MW-04 at a concentration of 24.4 mg/L, which is a decrease from 39.8 mg/L in October 2001. Total chromium was also detected in MW-09, MW-15S, and MW-16 at concentrations ranging from 0.011 mg/L to 0.16 mg/L. Figure 6-6 shows the concentrations of total chromium detected in shallow monitoring wells during January 2002. Figure 6-7 shows the concentrations of total chromium and corresponding groundwater elevations in MW-04 over time. Comparison of historical total chromium data with present data (Appendix B) indicates that total chromium concentrations, like those of hexavalent chromium, generally decreased from January 1989 to July 1993, and have fluctuated up and down since July 1993. Historically, the highest total chromium concentrations have been detected in MW-04. Sporadic detections of total chromium close to the detection limit have occurred historically in nearly all-shallow wells on site.

Cadmium (Cd)

During the January 2002 sampling event, cadmium was detected at concentrations greater than the reporting limit in one well. Cadmium was detected in well MW-04 at a concentration of 0.41 mg/L, which is a slight decrease from 0.44 mg/L in October 2001.

Previous concentrations in MW-04 have ranged from 0.028 mg/L in January 1989 to 0.86 mg/L in July 1992. Figure 6-8 shows the cadmium concentrations detected in the on-site wells during January 2002. Figure 6-9 shows the concentrations in MW-04 of cadmium and corresponding groundwater elevations in MW-04 over time. As shown on Figure 6-9, cadmium concentrations have fluctuated considerably (i.e., from non-detectable at a detection limit of 0.005 mg/L during July 1993 to 0.86 mg/L during July 1992) since July 1990.

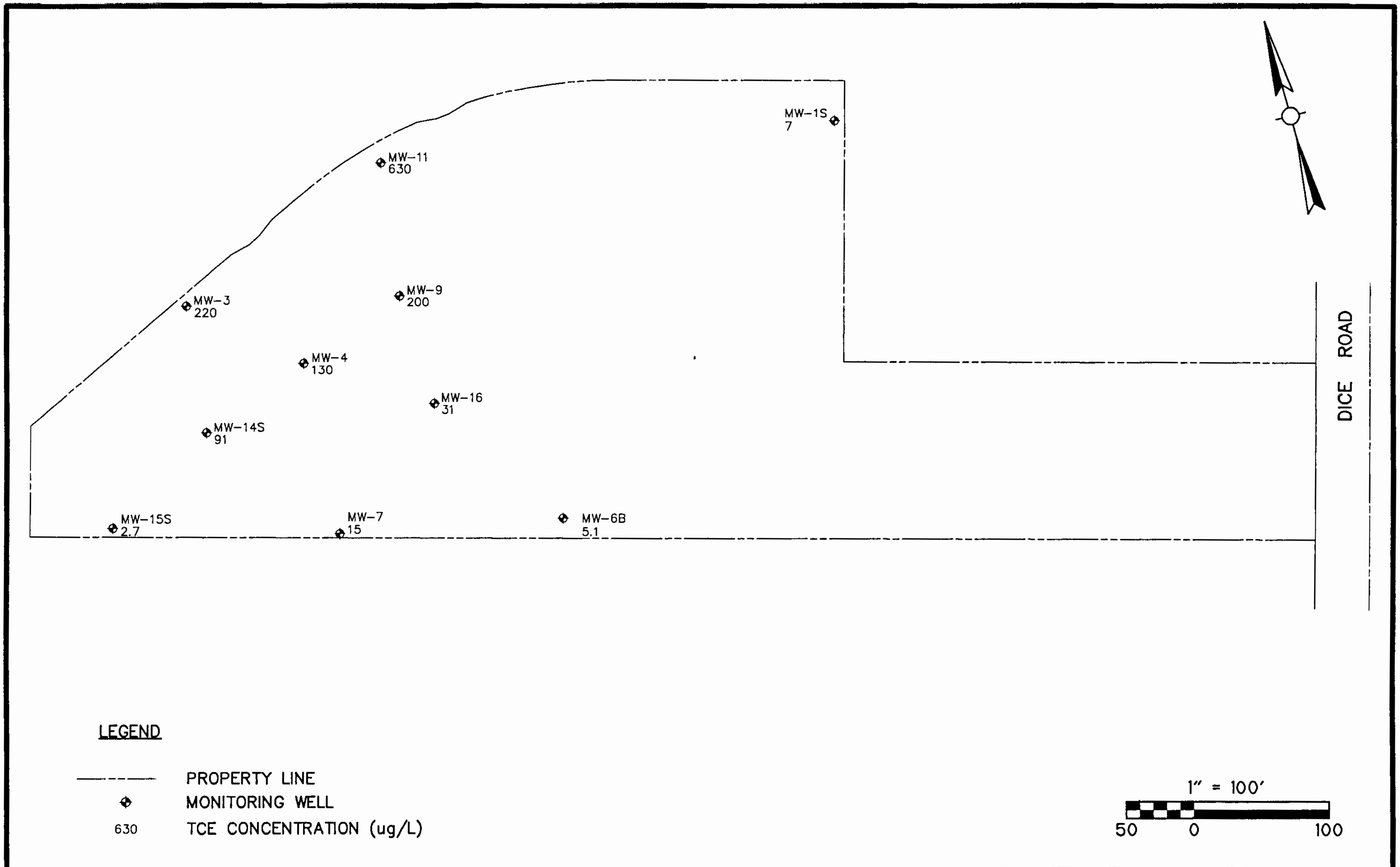
Cadmium has been detected consistently in only well MW-04. Historically, cadmium has been detected at concentrations of 0.01 mg/L in MW-01 during July 1989. Cadmium was detected in MW-14S at concentrations ranging from 0.005 mg/L to 0.018 mg/L between October 1990 through July 1991 and at a concentration of 0.0055 mg/L during July 1995. Cadmium was also detected in MW-15S at low concentrations close to the detection limit from July 1991 to January 1993. Detected concentrations in MW-15S ranged from 0.005 mg/L in July 1992 to 0.02 mg/L during October 1991.

Copper (Cu)

Copper was detected at concentrations greater than the reporting limit in one well (MW-07) at a concentration of 0.034 mg/L. Figure 6-10 shows the copper concentrations detected in the on-site wells during July 2001. Historically, with the exception of well MW-14S, elevated concentrations of copper above the MCL have not been detected in on-site monitoring wells.

pH

Groundwater samples from all wells were measured for pH in the field during purging activities and also by the analytical laboratory on the samples submitted for analysis. Field pH measurements were recorded in the field logbook during well purging. In July 2001, the field measurements of pH generally correlated with the values shown in Table 6-2, which range from 5.9 to 7.6. The laboratory pH measurement of 5.9 at well MW-04A is likely inaccurate, as it is much lower than any previous measurement, and does not agree with the field-measured pH of 7.33.



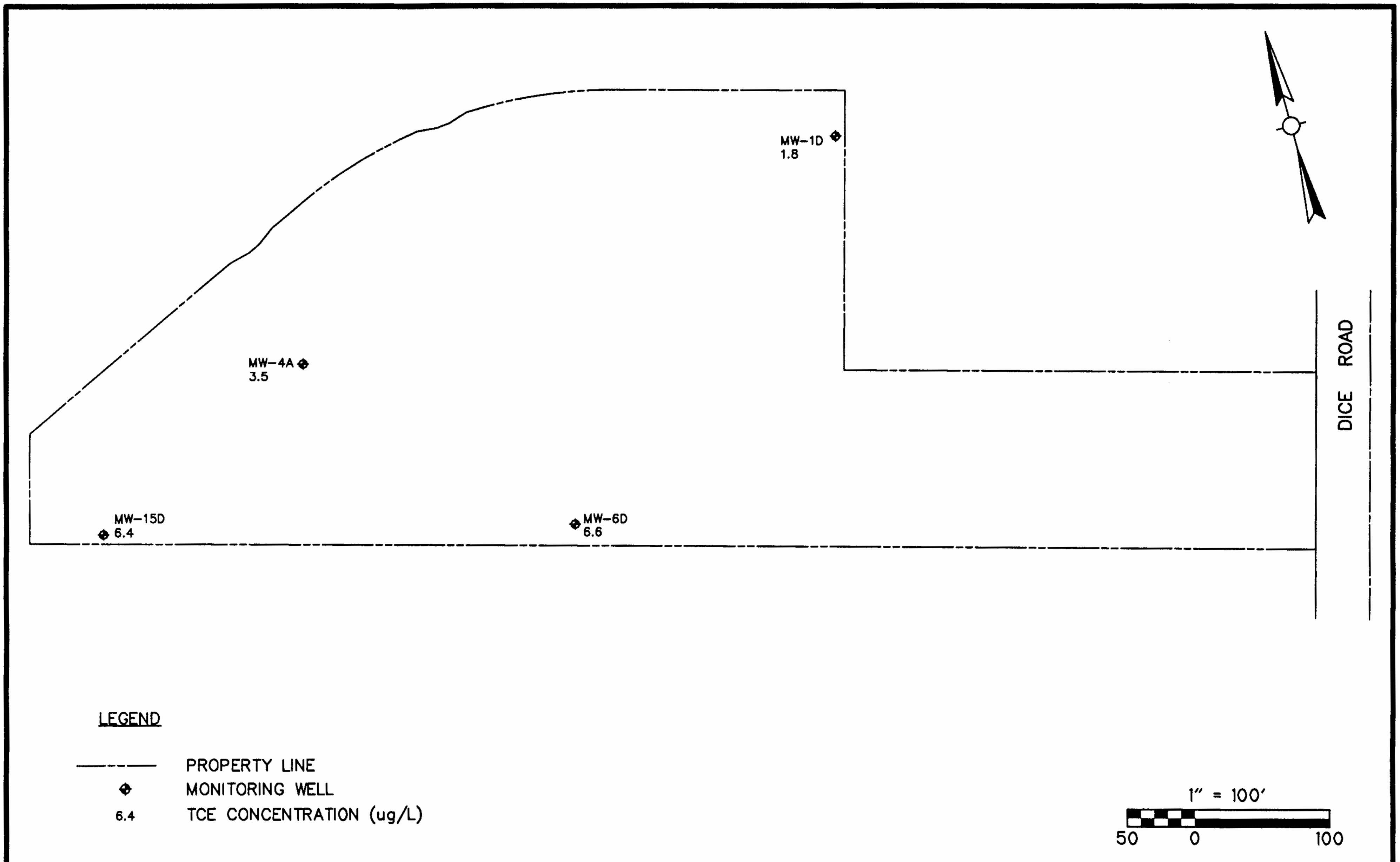
P:\2279\2279-111\CAD\2002-01\ Fig6-01 04/17/02 11:34 Negretegd

PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

TCE Concentrations - Shallow Wells
January 2002

CDM

Figure 6-1



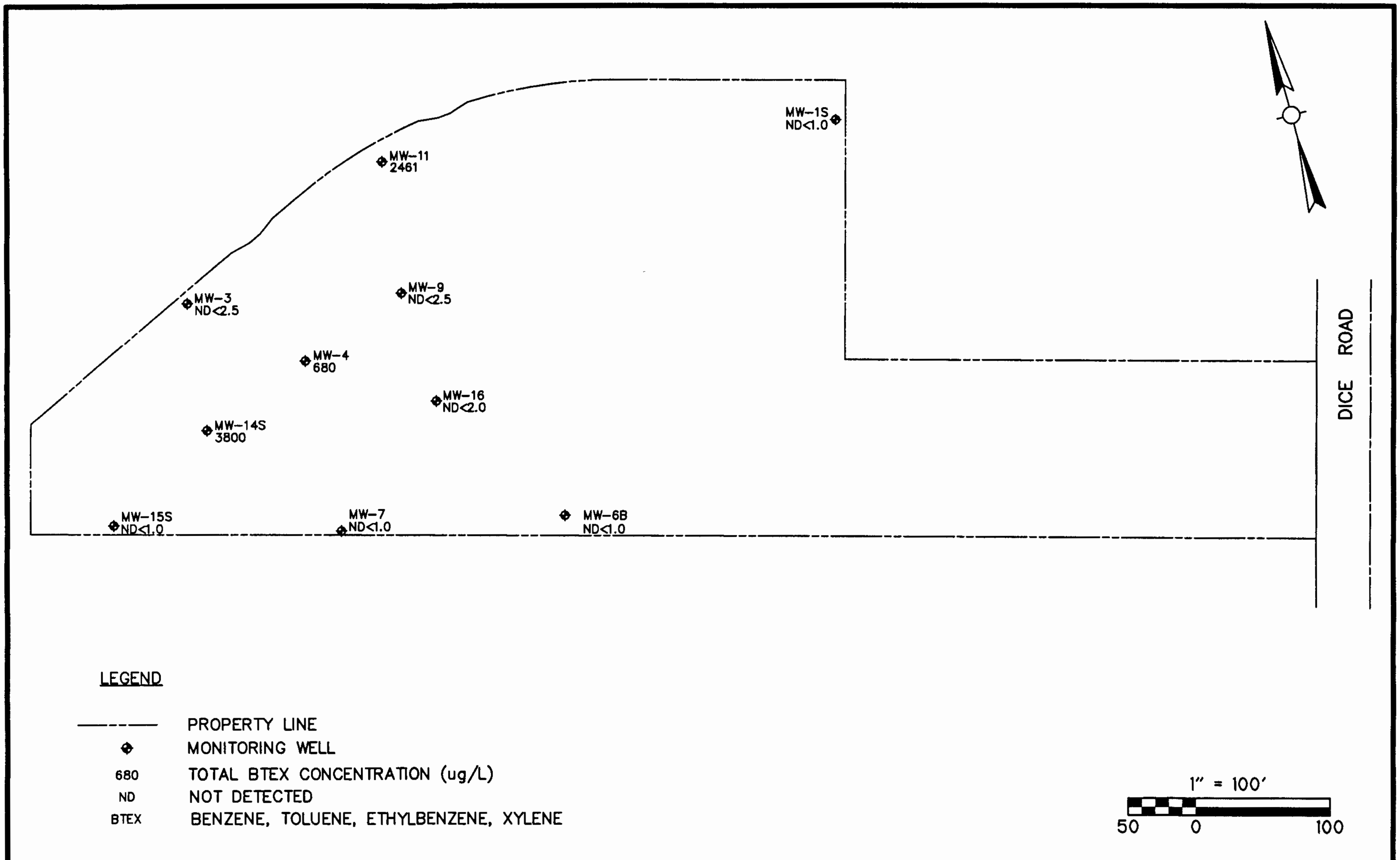
P:\2279\2279-111\CAD\2002-01\ Fig6-02 04/02/02 14:21 Negretegd

PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

TCE Concentrations - Deep Wells
January 2002

CDM

Figure 6-2



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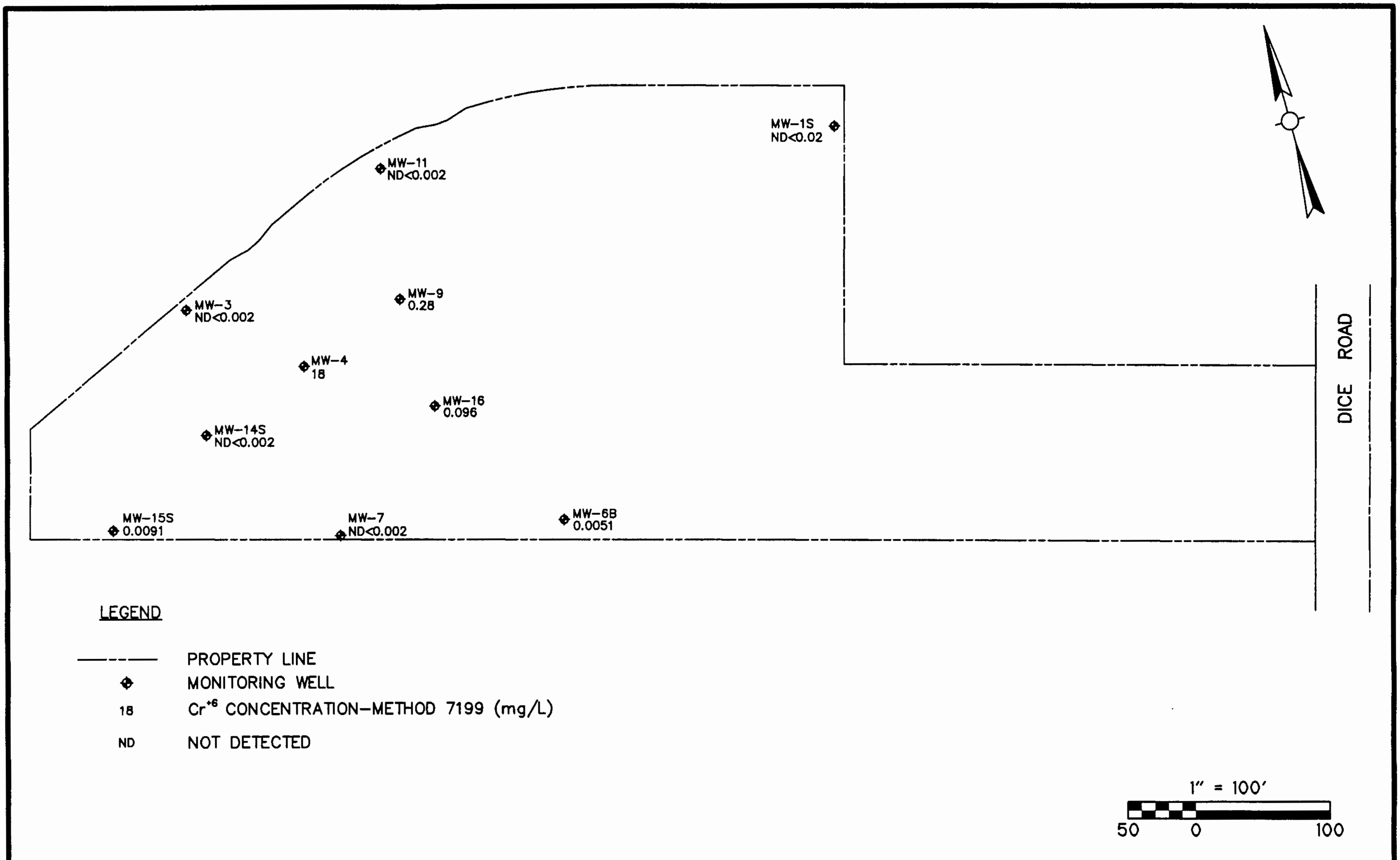
PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Total BTEX Concentrations - Shallow Wells
January 2002

CDM

Figure 6-3



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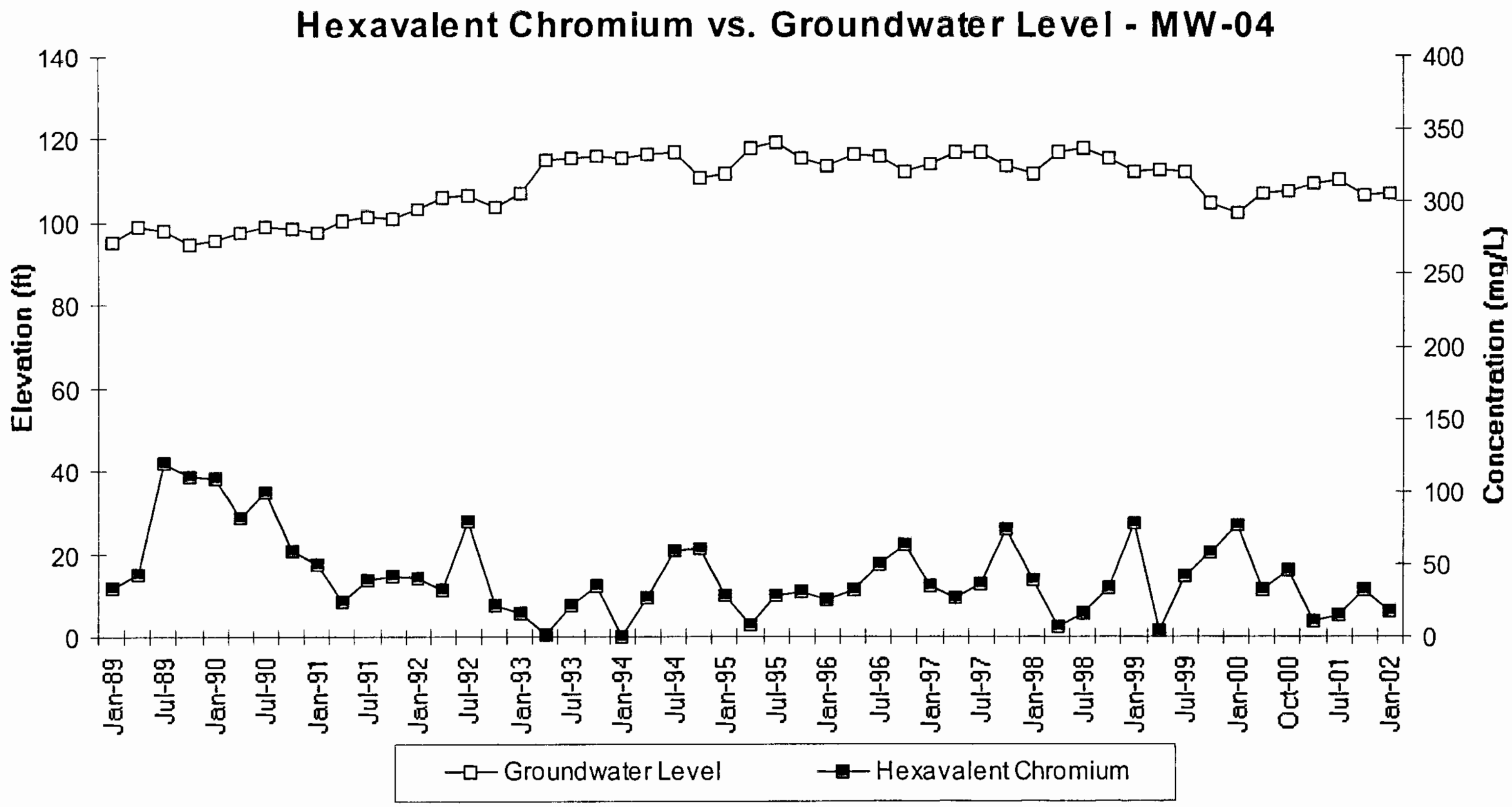
PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Hexavalent Chromium Concentrations - Shallow Wells
January 2002

CDM

Figure 6-4

P:\2279\2279-111\CAD\2002-01\GECWells.cdr - Negretegd - 04/17/2002 11:35

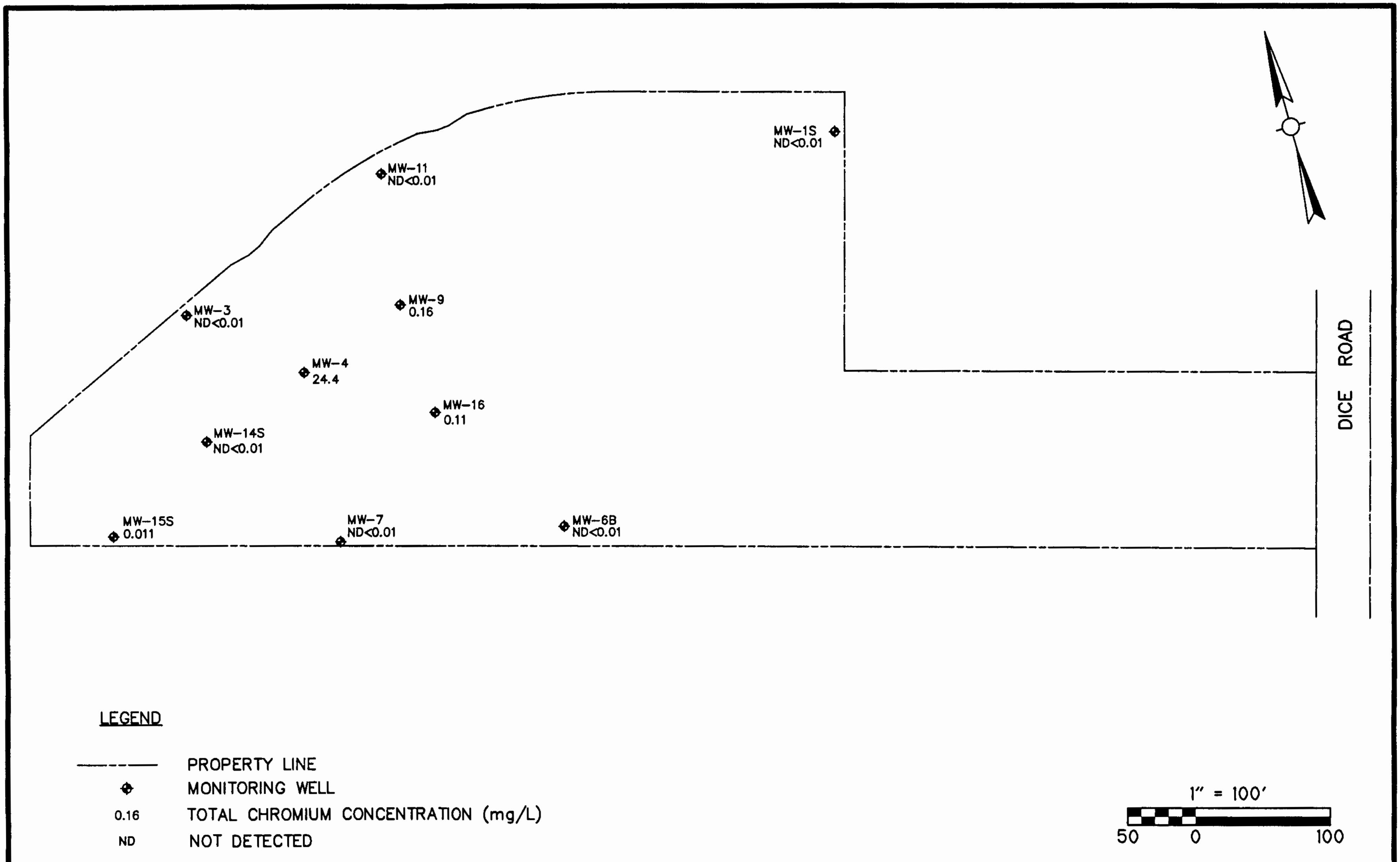


PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Hexavalent Chromium Concentration
Groundwater Elevation MW-04
January 1989 - January 2002

CDM
environmental engineers, scientists, planners, & management consultants

Figure 6-5



P:\2279\2279-111\CAD\2002-01\ Fig6-06 04/02/02 14:28 Negretegd

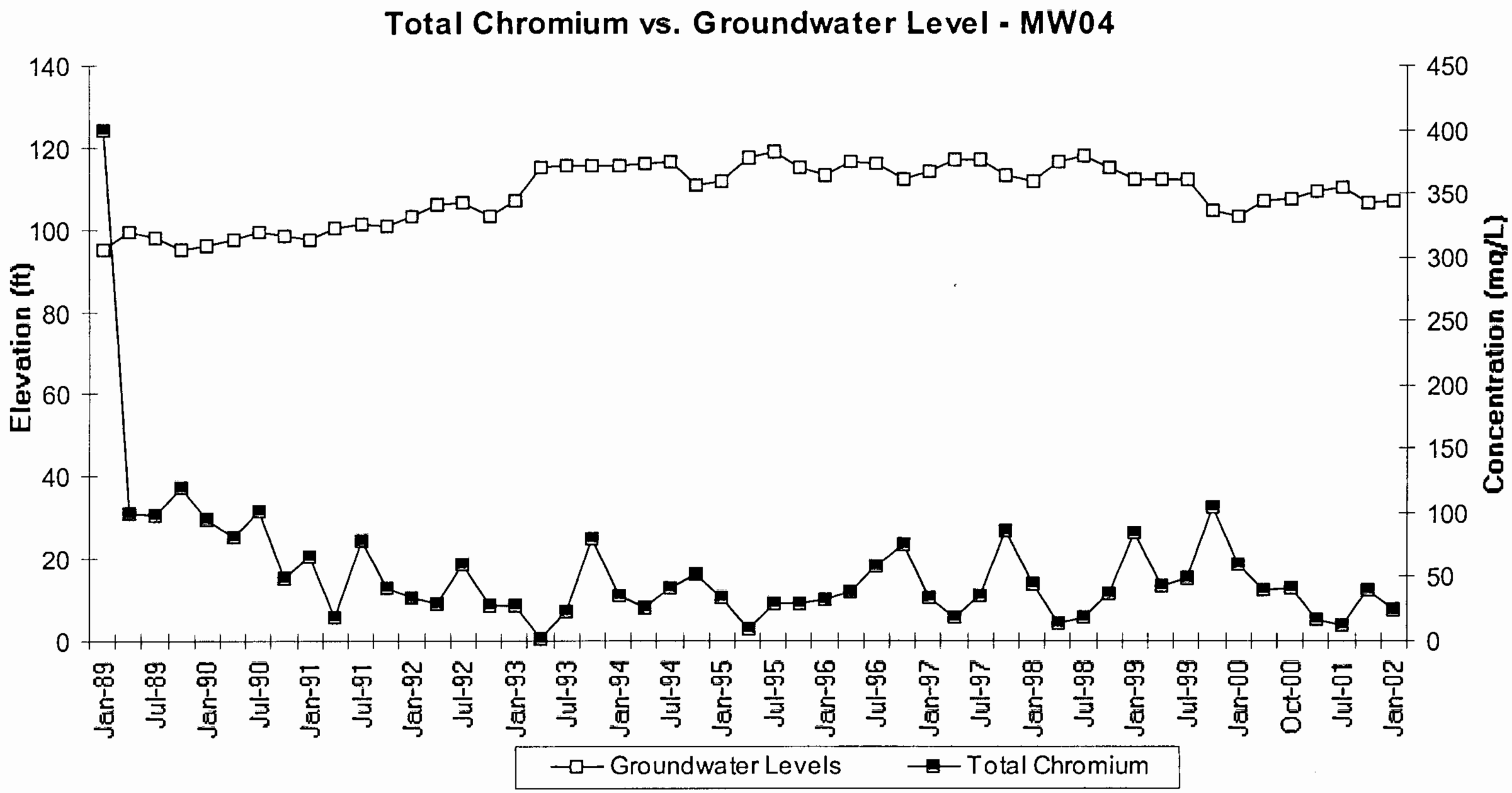
PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Total Chromium Concentrations - Shallow Wells
January 2002

CDM

Figure 6-6

P:\2279\2279-111\CAD\2002-01\GECWells.cdr - Negretegd - 04/17/2002 11:35

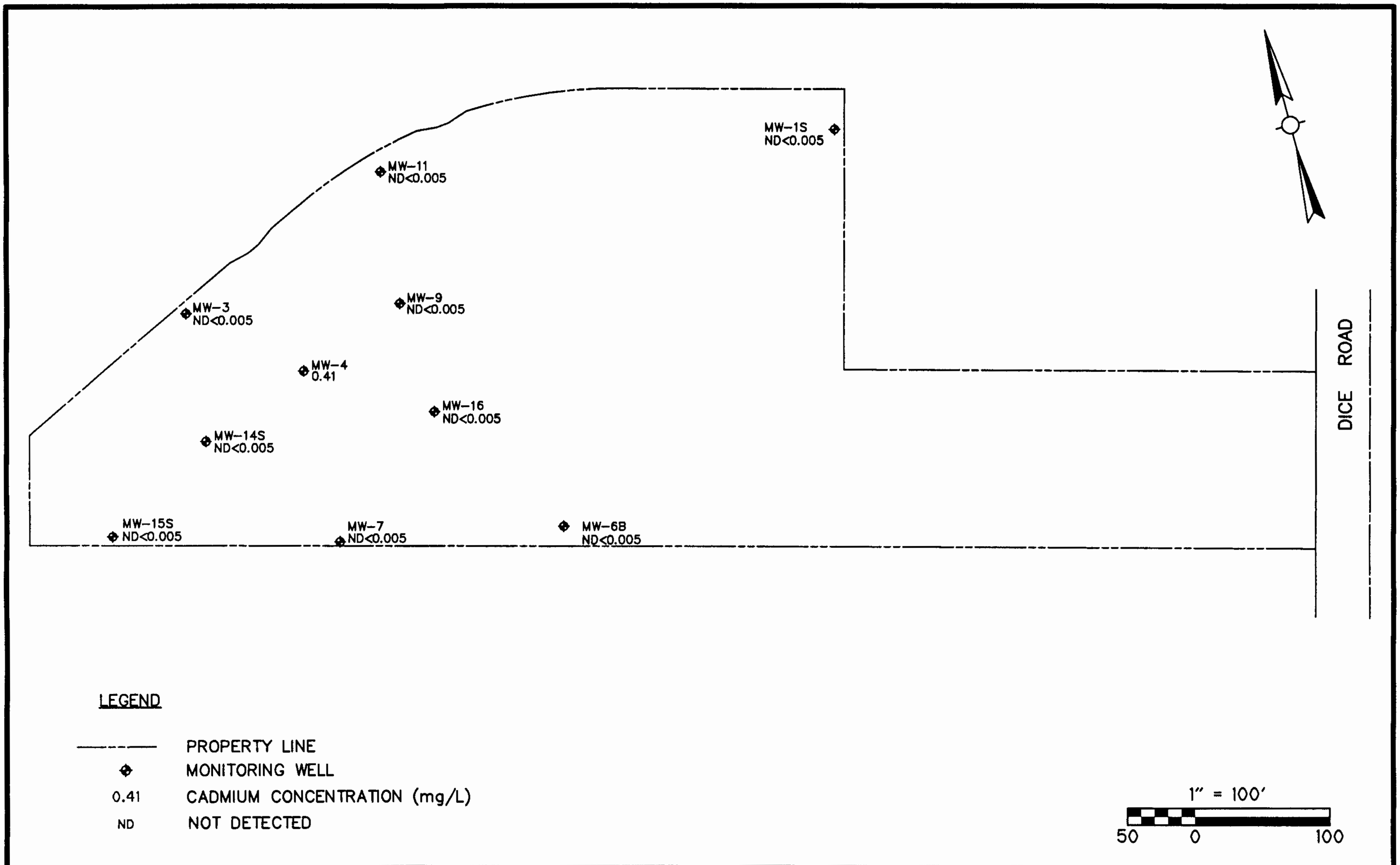


PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Total Chromium Concentration
Groundwater Elevation MW-04
January 1989 - January 2002

CDM
environmental engineers, scientists, planners, & management consultants

Figure 6-7



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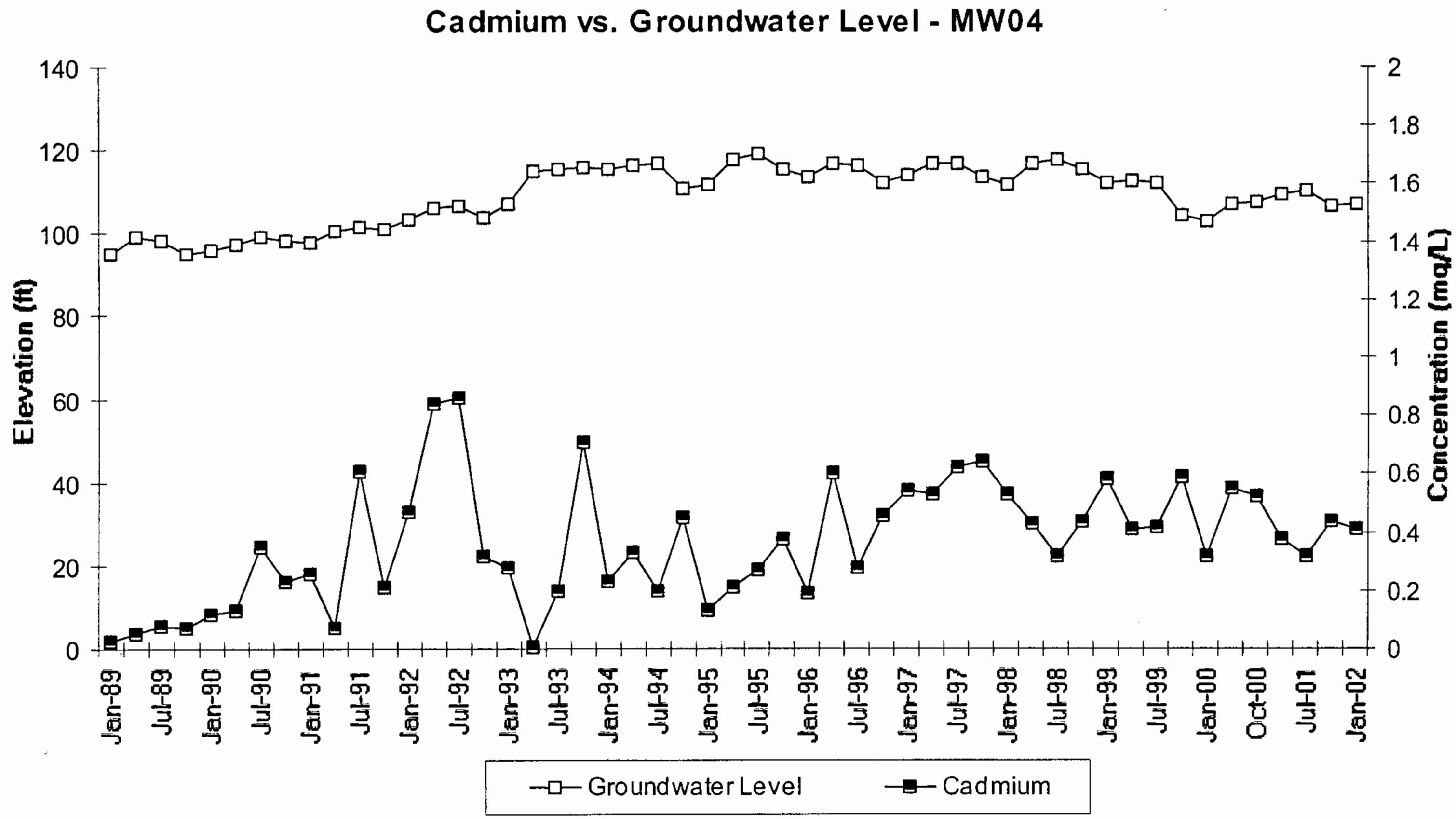
PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Cadmium Concentrations - Shallow Wells
January 2002

CDM

Figure 6-8

P:\2279\2279-111\CAD\2002-01\GECWells.cdr - Negretegd - 04/17/2002 11:35

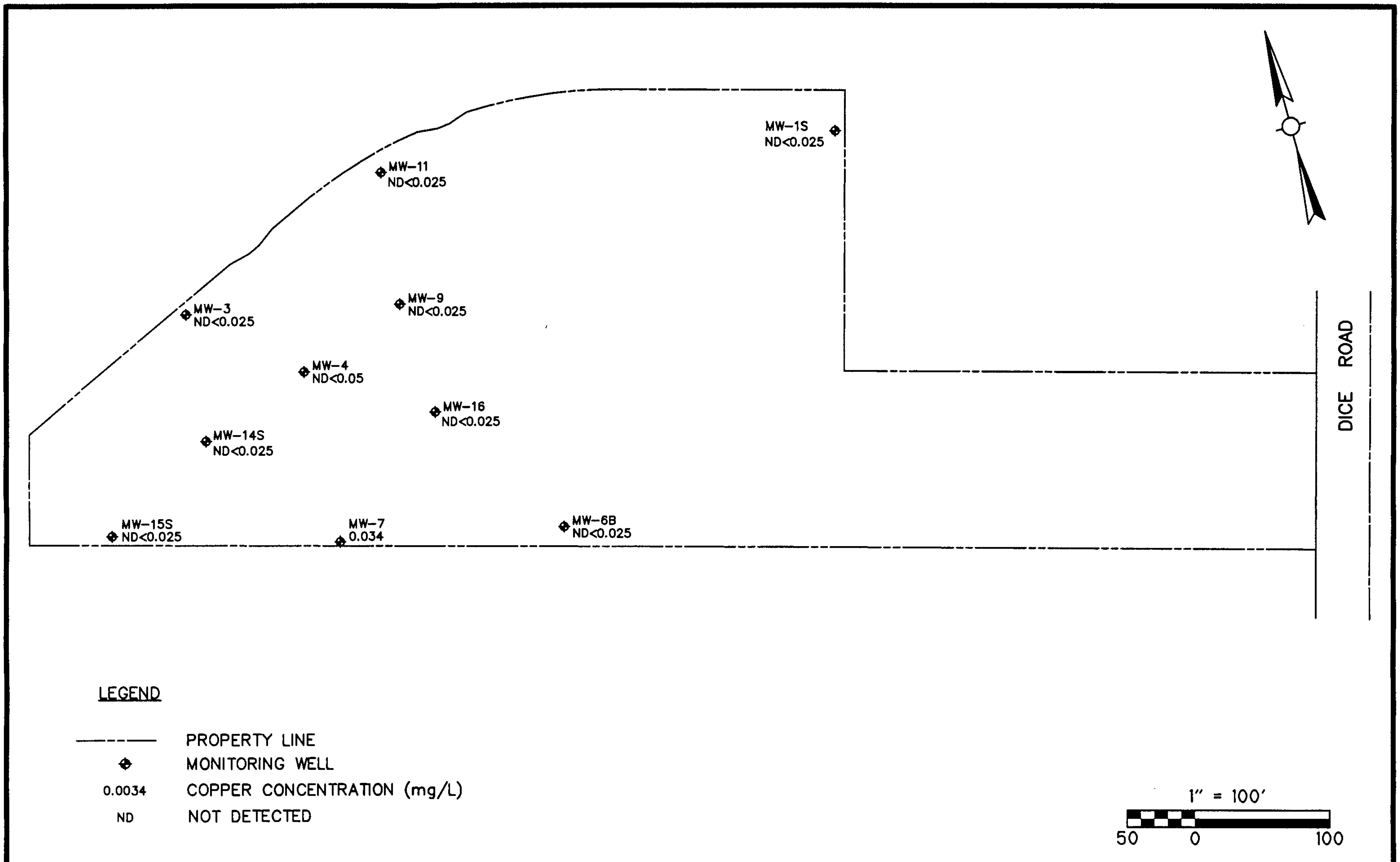


CDM
environmental engineers, scientists, planners, & management consultants

PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Cadmium Concentration
Groundwater Elevation MW-04
January 1989 - January 2002

Figure 6-9



P:\2279\2279-111\CAD\2002-01\ Fig6-10 04/02/02 14:28 Negretegd

PHIBRO-TECH, INC., SANTA FE SPRINGS, CA

Copper Concentrations - Shallow Wells
January 2002

CDM

Figure 6-10

Table 6-1
Phibro-Tech, Inc.
Groundwater Analytical Results - January 2002
Volatile Organic Compounds (VOCs) and 1,4-Dioxane Analytical Summary

Well Number	Sample Date	Sample Type	Benzene (1)	Toluene (150)	Ethyl-benzene (700)	Xylenes, Total (1,750)	PCE (5)	1,1,1-TCA (200)	TCE (5)	1,1-DCE (6)	1,1-DCA (5)	1,2-DCA (0.5)	CCl4 (0.5)	CFM (100)	cis-1,2-DCE (6)	trans-1,2-DCE (10)	MCL (5)	1,4-Dioxane (3#)
MW-01D	07/17/2001		1 U	1 U	1 U	1 U	1 U	1 U	2.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
	10/16/2001		1.5	1 U	1 U	1.5	5.3	1 U	3.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
	01/15/2002		1.6	1 U	1 U	1 U	2.5	1 U	1.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
MW-01S	07/17/2001		1 U	1 U	1 U	1 U	1 U	1 U	10	1 U	1.5	1 U	1 U	1 U	5.6	1 U	1 U	130
	10/16/2001		1 U	1 U	1 U	1 U	1 U	1 U	13	1 U	1.9	1.1	1 U	1 U	6.7	1 U	1 U	140
	01/15/2002		1 U	1 U	1 U	1 U	1.6	1 U	7	1 U	1 U	1.3	1 U	1 U	1.2	1 U	1 U	
MW-03	07/17/2001		1 U	1 U	1 U	1 U	2.3	1 U	41	6	5.1	1 U	29	20	1 U	1 U	1 U	
	10/17/2001		5 U	5 U	5 U	5 U	5.1	5 U	290	35	35	5 U	39	35	5 U	5 U	5 U	
	01/16/2002		2.5 U	2.5 U	2.5 U	2.5 U	5.6	2.5 U	220	28	30	2.5 U	33	30	2.5 U	2.5 U	2.5 U	
MW-04	07/18/2001		50 U	50 U	2400	50 U	50 U	50 U	74	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	16
		K	50 U	50 U	2400	50 U	50 U	50 U	76	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	16
	10/18/2001		50 U	50 U	3700	50 U	50 U	50 U	170	50 U	73	50 U	50 U	50 U	65	50 U	50 U	37
		K	50 U	50 U	2800	50 U	50 U	50 U	220	50 U	90	50 U	50 U	50 U	81	50 U	59	36
	01/17/2002		10 U	10 U	680	10 U	10 U	10 U	130	31	55	160	10 U	10 U	63	10 U	20	
		K	10 U	10 U	720	10 U	10 U	10 U	140	32	58	160	10 U	10 U	70	10 U	24	
MW-04A	07/18/2001		1 U	1 U	1 U	1 U	2.7	1 U	44	13	56	1 U	1 U	2.4	4.4	1.1	1 U	
	10/17/2001		1 U	1 U	1 U	1 U	2	1 U	22	6.2	25	1 U	1 U	1.1	1.7	1 U	1 U	0.95 U
	01/16/2002		1 U	1 U	1 U	1 U	1.7	1 U	3.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
MW-06B	07/18/2001		1 U	1 U	1 U	1 U	1 U	1 U	3.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
	10/17/2001		1 U	1 U	1 U	1 U	1 U	1 U	4.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
	01/16/2002		1 U	1 U	1 U	1 U	1 U	1 U	5.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
MW-06D	07/18/2001		1 U	1 U	1 U	1 U	1 U	1 U	3.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.96 U
	10/17/2001		1 U	1 U	1 U	1 U	1.1	1 U	4.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.95 U
	01/16/2002		1 U	1 U	1 U	1 U	1.1	1 U	6.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
MW-07	07/18/2001		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	84	13	76	140	2.5 U	2.5 U	21	2.7	2.5 U	
	10/18/2001		2 U	2 U	2 U	2 U	2 U	2 U	160	16	78	27	2 U	2.8	36	4.8	2 U	

Table 6-1
Phibro-Tech, Inc.
Groundwater Analytical Results - January 2002
Volatile Organic Compounds (VOCs) and 1,4-Dioxane Analytical Summary

Well Number	Sample Date	Sample Type	Benzene (1)	Toluene (150)	Ethyl-benzene (700)	Xylenes, Total (1,750)	PCE (5)	1,1,1-TCA (200)	TCE (5)	1,1-DCE (6)	1,1-DCA (5)	1,2-DCA (0.5)	CCl4 (0.5)	CFM (100)	cis-1,2-DCE (6)	trans-1,2-DCE (10)	MCL (5)	1,4-Dioxane (3#)
MW-07	01/17/2002		1 U	1 U	1 U	1 U	1.4	1 U	15	1.2	8.7	15	1 U	1 U	2.1	1 U	1 U	
MW-09	07/19/2001		5 U	5 U	440	25	5 U	5 U	110	26	88	68	5 U	16	11	5 U	6.8	18
		K	5 U	5 U	390	22	5 U	9.8	130	33	110	64	5 U	19	13	5 U	8.2	13
	10/18/2001		5 U	5 U	8.1	5 U	6.5	8.8	440	89	260	240	5 U	110	15	5 U	69	75
		K	5 U	5 U	33	5 U	5 U	5 U	340	64	160	250	5 U	65	7.6	5 U	68	88
	01/17/2002		2.5 U	2.5 U	2.5 U	2.5 U	4.4	3.6	200	43	89	140	2.5 U	35	5.3	2.5 U	14	
		K	2.5 U	2.5 U	2.5 U	2.5 U	4.2	3.8	200	44	91	150	2.5 U	36	5.3	2.5 U	15	
MW-11	07/17/2001		5 U	5 U	5 U	5 U	5 U	5 U	400	30	67	5 U	5 U	9.9	9	5 U	5 U	5.1
	10/18/2001		25 U	25 U	90	122	25 U	27	1500	98	410	25 U	25 U	50	51	25 U	25 U	12
	01/17/2002		25 U	31	1900	530	25 U	25 U	630	44	120	25 U	25 U	25 U	54	25 U	25 U	
MW-14S	07/19/2001		1 U	1 U	1 U	1 U	1.2	1 U	35	5.5	7.4	3.5	2.2	2.2	2.1	1 U	1 U	
	10/17/2001		2 U	2 U	2.4	2 U	2.4	2 U	170	39	56	6.4	22	23	5.2	2 U	2 U	
	01/16/2002		50 U	50 U	2700	1100	50 U	50 U	91	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	
MW-15D	07/19/2001		1 U	1 U	2.5	1 U	1.8	1 U	2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.95 U
	10/17/2001		2.2	1 U	1 U	1 U	2.4	1 U	6.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.95 U
	01/16/2002		1 U	1 U	1 U	1 U	8	1 U	6.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
MW-15S	07/19/2001		1 U	1 U	1 U	1 U	1.4	1 U	5.1	1 U	1 U	11	2.1	4	1 U	1 U	1 U	
	10/17/2001		1 U	1 U	1 U	1 U	1.2	1 U	2.8	1 U	1 U	8.2	2	3.5	1 U	1 U	1 U	
	01/16/2002		1 U	1 U	1 U	1 U	1.1	1 U	2.7	1 U	1 U	8.6	1.4	2.9	1 U	1 U	1 U	
MW-16	07/19/2001		2.5 U	2.5 U	2.7	2.5 U	2.5 U	2.5 U	26	7.3	72	160	2.5 U	2.5 U	7.2	2.5 U	2.5 U	
	10/18/2001		2 U	2 U	41	2 U	2 U	2 U	34	13	130	49	2 U	2 U	14	2.8	2 U	
	01/17/2002		2 U	2 U	2 U	2 U	2 U	2 U	31	11	100	39	2 U	2 U	8.3	2 U	2 U	

Table 6-1
Phibro-Tech, Inc.
Groundwater Analytical Results - January 2002
Volatile Organic Compounds (VOCs) and 1,4-Dioxane Analytical Summary

Well Number	Sample Date	Sample Type	Benzene (1)	Toluene (150)	Ethyl-benzene (700)	Xylenes, Total (1,750)	PCE (5)	1,1,1-TCA (200)	TCE (5)	1,1-DCE (6)	1,1-DCA (5)	1,2-DCA (0.5)	CCl4 (0.5)	CFM (100)	cis-1,2-DCE (6)	trans-1,2-DCE (10)	MCL (5)	1,4-Dioxane (3#)

Notes:

PCE = Tetrachloroethene; TCE = Trichloroethene; TCA = Trichloroethane; DCE = Dichloroethene; DCA = Dichloroethane; CFM = Chloroform; MCL = Methylene chloride; and CCl4 = Carbon tetrachloride.

California Maximum Contaminant Levels (MCLs) are shown in parenthesis. MCL shown for chloroform is the sum of trihalomethane isomers
= California Action Level.

Samples analyzed by EPA Method 8260.
All concentrations are reported in micrograms per liter (ug/L).
Only compounds detected in one or more samples are listed.
U = Not detected at a concentration greater than the reporting limit shown.

Sample Type:
K = Split sample

Table 6-2
Phibro-Tech, Inc.
Groundwater Analytical Results - January 2002
Metals and pH Analytical Summary

Well Number	Sample Date	Sample Type	pH	Cadmium (0.005)	Chromium (0.05)	Cr (+6)	Copper (1.3)
MW-01D	07/17/2001		7.3	0.005 U	0.01 U	0.0055	0.025 U
	10/16/2001		7.4	0.005 U	0.01 U	0.002 U	0.025 U
	01/15/2002		7.5	0.005 U	0.01 U	0.002 U	0.025 U
MW-01S	07/17/2001		6.6	0.005 U	0.01 U	0.002 U	0.025 U
	10/16/2001		6.8	0.005 U	0.01 U	0.0062	0.025 U
	01/15/2002		7.1	0.005 U	0.01 U	0.02 U	0.025 U
MW-03	07/17/2001		7	0.005 U	0.01 U	0.002 U	0.025 U
	10/17/2001		7.1	0.005 U	0.01 U	0.002 U	0.025 U
	01/16/2002		7.2	0.005 U	0.01 U	0.002 U	0.025 U
MW-04	07/18/2001		6.9	0.32	12.6	15	0.025 U
		K	6.8	0.31	11.9	14	0.025 U
	10/18/2001		6.9	0.44	39.8	32	0.05 U
		K	6.8	0.4	28.9	33	0.05 U
	01/17/2002		6.7	0.41	24.4	18	0.05 U
		K	6.9	0.35	18.9	18	0.025 U
MW-04A	07/18/2001		7.2	0.005 U	0.01 U	0.0055	0.025 U
	10/17/2001		7.5	0.005 U	0.01 U	0.0077	0.025 U
	01/16/2002		5.9	0.005 U	0.01 U	0.0052	0.025 U
MW-06B	07/18/2001		7.2	0.005 U	0.01 U	0.0053	0.025 U
	10/17/2001		7.5	0.005 U	0.01 U	0.0049	0.025 U
	01/16/2002		7.4	0.005 U	0.01 U	0.0051	0.025 U
MW-06D	07/18/2001		7.3	0.005 U	0.01 U	0.0024	0.025 U
	10/17/2001		7.6	0.005 U	0.01 U	0.002 U	0.025 U
	01/16/2002		7.4	0.005 U	0.01 U	0.002 U	0.025 U
MW-07	07/18/2001		6.6	0.005 U	0.01 U	0.002 U	0.037
	10/18/2001		6.7	0.01 U	0.02 U	0.002 U	0.073
	01/17/2002		7.2	0.005 U	0.01 U	0.002 U	0.034
MW-09	07/19/2001		7	0.005 U	0.085	0.076	0.025 U
		K	7	0.005 U	0.082	0.085	0.025 U
	10/18/2001		6.9	0.005 U	1.3	1.1	0.025 U
		K	6.9	0.005 U	1.4	1.1	0.025 U
	01/17/2002		7.1	0.005 U	0.16	0.28	0.025 U
		K	7.1	0.005 U	0.15	0.23	0.025 U
MW-11	07/17/2001		6.8	0.005 U	0.01 U	0.002 U	0.025 U
	10/18/2001		6.7	0.005 U	0.01 U	0.002 U	0.025 U
	01/17/2002		7.1	0.005 U	0.01 U	0.002 U	0.025 U

Table 6-2
Phibro-Tech, Inc.
Groundwater Analytical Results - January 2002
Metals and pH Analytical Summary

Well Number	Sample Date	Sample Type	pH	Cadmium (0.005)	Chromium (0.05)	Cr (+6)	Copper (1.3)
MW-14S	07/19/2001		7.1	0.005 U	0.025	0.0046	0.025 U
	10/17/2001		7.2	0.005 U	0.14	0.002 U	0.042
	01/16/2002		7.4	0.005 U	0.01 U	0.002 U	0.025 U
MW-15D	07/19/2001		7.3	0.005 U	0.013	0.0081	0.025 U
	10/17/2001		7.6	0.005 U	0.01 U	0.002 U	0.025 U
	01/16/2002		7.6	0.005 U	0.01 U	0.0081	0.025 U
MW-15S	07/19/2001		7.2	0.005 U	0.01 U	0.0074	0.025 U
	10/17/2001		7.5	0.005 U	0.01 U	0.0088	0.025 U
	01/16/2002		7.5	0.005 U	0.011	0.0091	0.025 U
MW-16	07/19/2001		7	0.005 U	0.01 U	0.0031	0.025 U
	10/18/2001		7	0.005 U	0.01 U	0.002 U	0.025 U
	01/17/2002		7.2	0.005 U	0.11	0.096	0.025 U

Notes:
California Maximum Contaminant Levels (MCLs) are shown in parenthesis. Secondary MCL is shown for copper.

All concentrations are reported in milligrams per liter (mg/L).
Metals analyzed by EPA Method 6010B, except for Cr (+6), which was analyzed by EPA Method 7199.
pH analyzed by EPA Method 9040B.
U = Not detected at a concentration greater than the reporting limit shown
Analyte not analyzed or not reported if left blank.

Sample Type:
K = Split sample

Section 7
Statistical Evaluation

The following sections contain a statistical evaluation of the monitoring data designed to determine if onsite wells have been impacted by metals, BTEX compounds (benzene, toluene, ethylbenzene, xylenes) or TCE (trichloroethene). The procedures used are based on the recommendations provided in the 1989 EPA Guidance document, Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities - Interim Final Guidance and in the 1992 Addendum document. In some instances, methods which have not been recommended in the documents cited above were used. However, unrecommended techniques were only used to supplement the recommended procedures. When statistical methods outlined in the 1989 guidance document were superseded by the 1992 Addendum, the more recent recommendations were followed.

7.1 Determination of Background Upper Tolerance Limit

Overview

The upper tolerance limit (UTL) is a method that is typically used in compliance monitoring to compare downgradient wells to established maximum contaminant levels (MCLS) or alternate contaminant levels (ACLs). In short, the UTL represents the upper end of the tolerance interval, which is calculated at a specified confidence level and coverage. For instance, a UTL with 95 percent coverage and a 95 percent confidence level represents a value which, with 95 percent confidence, will be exceeded less than 5 percent of the time.

In the present evaluation, we have calculated UTLs for the background well (MW-1S) and compared this value to each individual downgradient analytical result using a confidence level and coverage of 95 percent. When onsite wells exceed the background UTL consistently, it suggests that a significant difference from background may exist. While this is not a recommended technique for detection monitoring, we have applied background UTLs as a screening tool and as a supplement to the more rigorous statistical comparisons that follow.

Methods

Inherent in the calculation of a parametric UTL is the assumption of a normal (or log normal) data distribution. One of the tests for normality recommended in the 1992 Addendum to the EPA guidance document is the probability plot. When a data set is normally distributed, the corresponding probability plot is linear. However, for the background well, the analyses have a high percentage of nondetects for most parameters. Therefore, the probability plots appear to be nonlinear (see Appendix E-3). Fortunately, several methods are available to adjust the mean and standard deviation (used in the calculation of the UTL) based on various treatment of nondetects that allow the use of a parametric UTL. In a parametric UTL, the magnitude of the analyses are considered, while in a nonparametric analysis, the data is ranked from highest to lowest and the UTL is calculated from the ranks. The choice of method depends on the percentage of nondetects in the population and on comparison of special probability plots designed to test the assumptions built into each model. Parametric methods for determination of the UTL are described below. When the percentage of nondetects is above 90 percent, the UTL is calculated using a nonparametric method employing the Poisson model. In the Poisson model, detected values are treated as "rare events," such that the probability of occurrence is low, but constant. The model takes into account both the frequency of occurrence of detected values as well as the magnitude. Since the Poisson model is nonparametric, a normal or log normal data distribution is not required.

When the frequency of detect is greater than 10 percent and data are normally or log normally distributed, either the Atchison or Cohen adjustment is recommended. In the Atchison method, nondetects are assumed to equal zero, and therefore are not considered in the data distribution. In the Cohen adjustment, nondetects are assumed to have finite values between zero and the detection limit. Experience at EPA and USGS (EPA 1992) have shown that, in general, when the frequency of detect (FOD) is between 10 and 50 percent, Atchison's method is more valid; while between 50 and 90 percent FOD, Cohen's method is more valid. However, this is only a rule of thumb that should be verified periodically using the detects-only and censored probability plot method described above.

Results

The frequencies of detection for each parameter in the background well (MW-1S) is provided in Table 7-1. For hexavalent chromium, cadmium, and benzene, and toluene the FOD was less than 10 percent and the Poisson nonparametric method was used to calculate the UTL. Total chromium, copper, toluene, ethylbenzene, and total xylenes analyses were all between 10 and 50 percent FOD, suggesting that the Atchison adjustment should be employed before calculating the UTL. For trichloroethene (TCE), the data were both normally and log normally distributed (see Appendices E-2 and E-3) and the FOD was 100 percent; therefore, no adjustment was required, and the UTL was calculated directly.

The results of the UTL calculations and the comparison with each onsite well are presented in Table 7-2. Based on the number of analyses above the UTL for each onsite well, MW-3, MW-4, MW-7, MW-9, MW-11, MW-14S, MW-15 and MW-16 appear to differ from background with respect to the BTEX compounds. MW-4, MW-9, and MW-14S also appear to differ from background with respect to total chromium and copper. Note that the comparison of background UTLs to onsite wells described above is not definitive and will only be used in conjunction with the more in-depth statistical approaches that follow.

7.2 Comparison of Background and Onsite Wells

Overview

The recommended method for comparing onsite wells to background is the analysis of variance (ANOVA). There are two types of ANOVA C parametric and nonparametric. In order to use the parametric ANOVA, the data set must be normally or log normally distributed and the group variances must be equal. For the nonparametric approach, neither normality or equal variances are required, however, slightly larger datasets are needed to use a nonparametric method compared to the parametric ANOVA. The minimum number of analyses for the nonparametric test is 9, while for the parametric test, only 6 are required (EPA 1989).

The first assumption (normal or log normal distribution) should be tested using either the Shapiro-Wilk or probability plot method when the sample size is 50 or less. In general, the Shapiro-Wilk test is much more stringent than the probability plot since the method tends to focus on the "tails" of the distribution. The Lillifors, while not recommended in the Addendum, was suggested in the Interim Final Guidance (EPA 1989) and has been included for comparative purposes.

The test for equal group variances suggested in the Addendum to the Interim Final Guidance (EPA 1992) is the box plot. In a box plot, the extent of each box represent the 25th and 75th percentiles of the data set. Therefore, a long box tends to represent a larger variance than a short box. EPA (1992) recommends using a nonparametric ANOVA if the length of the largest box is equal to or greater than three times that of the smallest box. Another suggested criteria for a parametric ANOVA is a combined FOD, for both the background and the onsite well under consideration, of greater than 50 percent.

Methods

Normality tests were performed only for TCE, since for the other parameters, the combined FOD was <50 percent, precluding the use of the parametric ANOVA method. Results of the probability plot, and Shapiro-Wilk tests are presented in Table 7-3, while the raw data are in Appendices E-2 and E-3, respectively. Due to the stringent nature of the Shapiro-Wilk test, less weight was given to this test than the probability plots when conflicting results were obtained. As indicated on Table 7-3, the TCE data are log normal in all wells except MW-4, MW-9, and MW-4. The log normal data distribution is typical of environmental datasets where various degrees of dilution have occurred. The lack of normality or log normality precluded the use of a parametric ANOVA for wells MW-3 MW-6B, and MW-9.

In order to test the equal group variances assumption, box plots were constructed for TCE in each well (see Appendix E-4). The results indicate that the background box is less than a the length of the box for well MW-6B, indicating that this well cannot be compared to background using a parametric ANOVA. However, all other wells met the equal variance requirement.

A summary of the ANOVA method used is as follows:

> MW-4, MW-11, MW-14S, MW-15S, and MW-16 for TCE C parametric ANOVA using 2 D.L. for nondetects
>
> All other parameters and wells C nonparametric, Kruskal Wallis Mann Whitney U Test

Note that 2 D.L. was used when the FOD was greater than 85 percent in a single well.

Results

The results of the parametric ANOVA and nonparametric tests are included in Appendices E-2 and E-3, respectively, while a summary is provided in Table 7-3. An "R" indicates that the null hypothesis was rejected, or that the two wells are not the same, while an "A" indicates the null hypothesis was accepted. In general, the results are similar to the UTL comparisons; except well MW-16 appears to differ from background with respect to the BTEX compounds. The results for TCE were obtained using both the normal and log normal assumptions for comparative purposes. The results indicate that, regardless of the data distribution, only well MW-6B was the same as background with respect to TCE. The results have not changed since the October 2001 analysis.

Table 7-1 Percent of Total Samples in Shallow Wells Reported Above the Detection Limit Quarterly Data: January 1989 to January 2002 at Philbro-Tech, Inc.

Parameter	MW-1S	MW-3	MW-4	MW-6B	MW-7	MW-9	W-11	MW-14S	MW-15S	MW-16
Number Samples (n)	51	51	51	47	51	53	51	43	45	38
Metals (mg/L) (%)										
Hexavalent chromium	3.9	5.8	100.0	8.3	3.9	35.8	3.9	50.0	15.6	7.9
Total chromium	9.8	7.8	98.1	23.4	17.6	47.2	11.8	79.1	34.1	7.9
Cadmium	2.0	0	98.1	0	3.9	3.8	0	18.6	18.2	0
Copper	21.6	9.8	26.4	4.3	49.0	9.4	21.6	58.1	11.4	15.8
Aromatics (µg/L) (%)										
Benzene	2.0	9.8	17.0	0	17.6	5.7	0	18.6	0	0
Toluene	8.0	14.0	30.8	34.8	14.0	30.8	40.0	16.7	23.3	16.2
Ethylbenzene	25.5	52.9	86.8	44.7	41.2	64.2	84.3	76.7	54.5	76.3
Total xylenes	27.5	41.2	77.4	40.4	29.4	49.1	68.6	53.5	47.7	42.1
Halocarbons (µg/L) (%)										
Trichloroethene	100.0	96.1	94.3	100.0	100.0	94.3	96.1	100.0	97.7	100.0

% = Percent detected

Table 7-2 Definition of Upper Tolerance Levels in Background Shallow Wells Quarterly Data: January 1989 to January 2002 at Philbro-Tech, Inc.

Parameter	% Detected in Bkgd [1]	Tolerance Limit Method	Upper Tolerance Limit [2]	Upper Tolerance Limit Exceeded								
				MW-3 51 [3]	MW-4 53	MW-6B 47	MW-7 51	MW-9 53	MW-11 51	MW-14S 43	MW-15S 45	MW-16 38
Metals (mg/L)												
Hexavalent Chromium	3.9	P	1.0	-	51	-	-	9	-	1	-	-
Total Chromium	9.8	A	0.042	2	53(1)	1	2	21	-	21(1)	1	1
Cadmium	2.0	P	0.5	-	14	-	-	-	-	-	-	-
Copper	21.6	A	0.029	5 (1)	16 (8)	3 (1)	21 (2)	5 (1)	9 (1)	17	4	5
Aromatics (µg/L)												
Benzene	2.0	P	24.5	3 (3) [5]	13 (12)	-	-	14 (14)	10 (10)	2 (2)	-	3 (3)
Toluene	8.0	A	1.21	22 (15)	44 (28)	14 (1)	17 (11)	42 (26)	41(21)	19 (13)	11 (2)	25 (20)
Ethylbenzene	25.5	A	2.18	23 (6)	48 (3)	15 (1)	18 (6)	45 (12)	46 (6)	31 (1)	22	30 (3)
Total xylenes	27.5	A	4.59	18(6)	50 (10)	15(1)	11 (4)	42 (17)	39 (10)	20 (4)	11	16 (7)
Halocarbons (µg/L)												
Trichloroethene	100.0	T	20.29	40 (1)	53 (3)	10	48	52 (3)	49	39	3	35

1 MW-1S is background shallow well, n = 51
2 In ppm or ppb, as noted for groups
3 Number of samples collected at corresponding well
4 Number of samples that exceed upper tolerance level at corresponding well
5 (6) number of samples exceeding limit that are reported as ND
- = None of samples exceeded the upper tolerance limit
P = Poisson
A = Atchison adjusted
T = Unadjusted limit

Table 7-3 Comparison of Background and Onsite Shallow Wells Quarterly Data: January 1989 to January 2002 at Phibro-Tech, Inc.

Parameter	MW-3	MW-4	MW-6B	MW-7	MW-9	MW-11	MW-14S	MW-15S	MW-16
Metals (mg/L)									
Hexavalent chromium [1]	A	R	A	A	R	A	R	A	A
Total chromium [1]	A	R	R	A	R	A	R	R	A
Cadmium [1]	A	R	A	A	A	A	A	A	A
Copper [1]	A	A	A	R	A	A	R	A	A
Aromatics (µg/L)									
Benzene [1]	R	R	A	R	R	R	R	A	R
Toluene [1]	R	R	R	R	R	R	R	A	R
Ethylbenzene [1]	R	R	R	R	R	R	R	R	R
Total xylenes [1]	R	R	A	A	R	R	R	A	R
Halocarbons (µg/L)									
Trichloroethene [2]	R [3]	R [4]/R [5]	A [3]	R [3]	R/R	R [3]	R/R	R/R	R/R

[1] Background to onsite comparison by Mann Whitney U Method, using D.L. for ND, at 95 percent confidence level
[2] Background to onsite comparison by one way ANOVA Method using 1/2 D.L. for ND
[3] Nonparametric comparison used for TCE
[4] Normal Distribution used in comparison
[5] Log normal Distribution used in comparison
A Null Hypothesis, that means are equal, is accepted
R Null Hypothesis, that means are equal, is rejected
R/R Null Hypothesis, rejected using parametric (top letter) and nonparametric (bottom letter) tests

Section 8
Assessment of Quarterly Groundwater Monitoring Program Status

In the October 1990 groundwater monitoring report, changes in the quarterly groundwater-sampling program were proposed. These changes were first implemented during the April 1991 sampling event and included reducing the number of wells sampled and parameters analyzed in each well. The current groundwater-sampling program will only be used as an interim groundwater-sampling program, until EPA has selected a remediation alternative from the Corrective Measures Study (CMS). Based on over 16 years of quarterly monitoring at the site, off-site migration of the soluble metals plume has not been observed.

The analytical parameters for the January 2002 quarterly monitoring were as follows:

Wells	Volatile Organic Compounds (EPA 8260)	Chromium, Cadmium, Copper	Hexavalent Chromium	pH
MW-01S, MW-01D	X, X	X, X	X, X	X, X
MW-03, MW-04A	X, X	X, X	X, X	X, X
MW-11 MW-06B	X, X	X, X	X, X	X, X
MW-06D, MW-07	X, X	X, X	X, X	X, X
MW-09, MW-04	X, X	X, X	X, X	X, X
MW-14S, MW-15S	X, X	X, X	X, X	X, X
MW-15D, MW-16	X, X	X, X	X, X	X, X

Beginning with the January 1997 sampling event, EPA Method 8010/8020 was replaced with EPA Method 8260. This change was requested by the analytical laboratory, which no longer performs 8010/8020 analysis. Methyl tertiary butyl ether (MTBE) analysis was performed once, in January 1997. Since there were no detections of MTBE in any of the groundwater samples, this analysis was discontinued. Starting with the October 2000 sampling event, the analytical method for hexavalent chromium was changed from EPA Method 7196 to 7199. DTSC requested that six selected wells be analyzed for 1,4-Dioxane in July 2001 and October 2001. Analysis of groundwater samples for 1,4-Dioxane thus did not occur for the January 2002 event.

Statistical analysis was historically conducted annually. Beginning with the October 1993 sampling event, statistical analysis has been performed on a quarterly basis, as requested by DTSC.

During 2000, three sampling events were performed (January, April and October). Sampling and reporting frequency was changed from quarterly to semi-annual after the April 2000 sampling event. However, quarterly groundwater monitoring resumed in April 2001. The next quarterly event will occur in April 2002. During the April 2002 event, 14 on-site wells will be sampled and analyzed for volatile organics using EPA Method 8260, chromium, cadmium, copper, hexavalent chromium, and pH. The water levels at the 14 wells sampled, in addition to the remaining unsampled wells (with the exception of MW-02), will also be measured.

Section 9
References

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Appendix A
General Analytical Detection Limits

TABLE A-1
PHIBRO-TECH, INC.
HEAVY METALS AND INORGANICS ANALYSIS
Typical Detection Limits

Method Number	Analytical Parameter	Detection Limit	Units
EPA 6010-L	Antimony	0.06	mg/L
EPA 6010-L	Barium	0.01	mg/L
EPA 6010-L	Beryllium	0.002	mg/L
EPA 6010-L	Cadmium	0.005	mg/L
EPA 6010-L	Chromium	0.01	mg/L
EPA 6010-L	Cobalt	0.01	mg/L
EPA 6010-L	Copper	0.02	mg/L
EPA 6010-L	Lead	0.05	mg/L
EPA 6010-L	Molybdenum	0.02	mg/L
EPA 6010-L	Nickel	0.04	mg/L
EPA 6010-L	Silver	0.01	mg/L
EPA 6010-L	Thallium	0.5	mg/L
EPA 6010-L	Tin	0.1	mg/L
EPA 6010-L	Vanadium	0.01	mg/L
EPA 6010-L	Zinc	0.02	mg/L
EPA 7199	Chromium, Hexavalent	0.002	mg/L
EPA 7061-L	Arsenic	0.005	mg/L
EPA 9012	Cyanide, Total	0.01	mg/L
EPA 7470	Mercury	0.001	mg/L

EPA 300.0	Chloride	5	mg/L
EPA 300.0	Nitrate	0.2	mg/L
EPA 7741-L	Selenium	0.1	mg/L
EPA 376.2	Sulfide, as Sulfur	1.2	mg/L

TABLE A-2

PHIBRO-TECH, INC.

VOLATILE ORGANIC COMPOUNDS

Typical Detection Limits

Method Number	Analytical Parameter	Detection Limit	Units
EPA 8260	Benzene	0.5	µg/L
EPA 8260	Toluene	1.0	µg/L
EPA 8260	Ethylbenzene	1.0	µg/L
EPA 8260	Xylenes, Total	1.0	µg/L
EPA 8260	Chloromethane	1.0	µg/L
EPA 8260	Bromomethane	1.0	µg/L
EPA 8260	Vinyl Chloride	1.0	µg/L
EPA 8260	Chloroethane	1.0	µg/L
EPA 8260	Methylene Chloride	1.0	µg/L
EPA 8260	Trichlorofluoromethane	1.0	µg/L
EPA 8260	1,1-Dichloroethene	1.0	µg/L
EPA 8260	1,1-Dichloroethane	1.0	µg/L
EPA 8260	trans-1,2-Dichloroethene	1.0	µg/L
EPA 8260	Chloroform	1.0	µg/L
EPA 8260	1,2-Dichloroethane	1.0	µg/L
EPA 8260	1,1,1-Trichloroethane	1.0	µg/L
EPA 8260	Carbon Tetrachloride	1.0	µg/L
EPA 8260	Bromodichloromethane	1.0	µg/L
EPA 8260	1,2-Dichloropropane	1.0	µg/L
EPA 8260	trans-1,3-Dichloropropene	1.0	µg/L
EPA 8260	Trichloroethene	1.0	µg/L
EPA 8260	Dibromochloromethane	1.0	µg/L
EPA 8260	1,1,2-Trichloroethane	1.0	µg/L
EPA 8260	cis-1,3-Dichloropropene	1.0	µg/L
EPA 8260	2-Chloroethylvinyl ether	1.0	µg/L
EPA 8260	Bromoform	1.0	µg/L
EPA 8260	Tetrachloroethene	1.0	µg/L
EPA 8260	1,1,2,2-Tetrachloroethane	1.0	µg/L
EPA 8260	Chlorobenzene	1.0	µg/L
EPA 8260	1,2-Dichlorobenzene	1.0	µg/L
EPA 8260	1,3-Dichlorobenzene	1.0	µg/L
EPA 8260	1,4-Dichlorobenzene	1.0	µg/L

Appendix B
Historical Sampling Results

Shallow Wells
PHIBRO-TECH, INC.
Historical Results
January 1989 to July 2001

		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 1S										
Jan-89	96.74	ND < 0.01	0.014	ND < 0.003	ND < 0.009	ND < 0.01	ND < 0.0	ND < 0.0	ND < 0.0	19
Apr-89	100.45	ND < 0.05	0.1	ND < 0.01	ND < 0.02	ND < 0.7	ND < 1.0	ND < 1.0	3.0	23
Jul-89	99.00	ND < 0.05	0.06	0.01	0.03	ND < 0.7	ND < 1.0	ND < 1.0	ND < 1.0	13
Oct-89	96.76	ND < 0.05	ND < 0.02	ND < 0.01	ND < 0.05	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	12
Jan-90	97.73	ND < 0.02	ND < 0.01	ND < 0.01	ND < 0.02	ND < 0.5	ND < 0.5	ND < 0.5	ND < 1.0	16
Apr-90	99.30	ND < 0.02	0.02	ND < 0.0050	0.02	ND < 2.5	ND < 2.5	ND < 2.5	ND < 5.0	20
Jul-90	100.83	ND < 0.02	ND < 0.01	ND < 0.01	0.03	ND < 0.5	ND < 0.5	ND < 0.5	ND < 1.0	18
Oct-90	99.81	ND < 0.02	ND < 0.01	ND < 0.0050	0.023	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	18
Jan-91	99.19	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	26
Apr-91	101.95	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	22
Jul-91	102.94	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	17
Oct-91	102.33	ND < 0.02	0.01	ND < 0.0050	0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	14
Jan-92	104.60	0.10	0.0081	ND < 0.0027	0.04	ND < 1	1.5	1.2	4.3	13
Apr-92	107.28	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	9.9
Jul-92	107.87	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	10
Oct-92	105.53	ND < 0.02	ND < 0.01	ND < 0.0050	0.035	0.95	ND < 1.0	ND < 1.0	ND < 1.0	11
Jan-93	109.82	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	2.2	1.3	5.6	9.2
Apr-93	116.01	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	5.7
Jul-93	116.59	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	1.7	1.7	4.0	11
Oct-93	116.50	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	2.2	4.3	14
Jan-94	116.60	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	9.3
Apr-94	117.10	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	14
Jul-94	117.80	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	7.9
Oct-94	112.23	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	5.8	13
Jan-95	113.59	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	5.2
Apr-95	118.78	ND < 0.02	0.0029	ND < 0.01	ND < 0.02	ND < 0.5	ND < 1.0	1.3	1.0	4.4
Jul-95	120.06	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	1.2	3.5	6.1	6.2
Oct-95	116.48	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	1.7	3.9	15
Jan-96	114.84	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	1.7	5.1	8.4
Apr-96	118.03	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	3.4	4.9	2.9
Jul-96	117.42	ND < 0.01	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	2.2	3.7	9.7
Oct-96	113.85	ND < 0.01	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	2.1	2.8	16
Jan-97	115.73	ND < 0.02	ND < 0.01	ND < 0.0050	0.022	ND < 0.5	ND < 1.0	ND < 1.0	2.0	6.0
Apr-97	118.21	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	1.4	1.2	15
Jul-97	118.18	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	14
Oct-97	114.82	ND < 0.02	ND < 0.01	ND < 0.0050	0.023	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	12
Jan-98	113.23	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	12
Apr-98	118.16	ND < 0.02	ND < 0.01	ND < 0.0050	0.021	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	14
Jul-98	119.12	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	14
Oct-98	116.57	ND < 0.02	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	7.8
Jan-99	113.94	ND < 0.01	ND < 0.01	ND < 0.0050	ND < 0.02	ND < 0.5	ND < 1.0	2.0	ND < 1.0	10
Apr-99	114.01	ND < 0.025	ND < 0.01	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 2.0	7.2
Jul-99	113.62	ND < 0.020	ND < 0.010	ND < 0.0050	0.052	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	9.1
Oct-99	106.70	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 2.0	9.1
Jan-00	102.73	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	9.9
Apr-00	108.83	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	16
Oct-00	109.09	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	8.9
Apr-01	109.04	ND < 0.0020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	13

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		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 3										
Jan-89	95.02	ND < 0.01	0.014	0.003	ND < 0.009	7.4	17.0	4900.0	1500.0	74
Apr-89	99.29	ND < 0.5	0.07	ND < 0.01	ND < 0.02	ND < 50	ND < 50.0	1200.0	60.0	110
Jul-89	98.21	ND < 0.5	0.06	ND < 0.01	ND < 0.02	ND < 7	ND < 10.0	ND < 10.0	ND < 10.0	120
Oct-89	94.75	ND < 0.5	ND < 0.02	ND < 0.01	ND < 0.05	ND < 50	ND < 100.0	1600.0	150.0	ND < 100
Jan-90	95.98	ND < 0.02	ND < 0.01	ND < 0.01	ND < 0.02	ND < 5	ND < 5.0	110.0	ND < 10.0	65
Apr-90	97.72	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 50	ND < 50.0	2100.0	720.0	74
Jul-90	99.27	ND < 0.02	ND < 0.01	ND < 0.01	ND < 0.02	ND < 5	ND < 5.0	ND < 5.0	ND < 10.0	130
Oct-90	97.29	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	9	2.0	ND < 1.0	ND < 1.0	130
Jan-91	97.69	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	38
Apr-91	99.81	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	27
Jul-91	101.63	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	28
Oct-91	100.99	ND < 0.02	ND < 0.01	ND < 0.005	0.03	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	71
Jan-92	103.44	ND < 0.5	0.0081	ND < 0.0027	0.02	ND < 1	ND < 1.0	ND < 1.0	4.0	76
Apr-92	106.04	ND < 0.02	ND < 0.02	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 5.0	25
Jul-92	106.61	ND < 0.02	ND < 0.02	ND < 0.005	0.13	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	76
Oct-92	103.93	ND < 0.02	ND < 0.02	ND < 0.005	0.038	0.52	ND < 1.0	ND < 1.0	ND < 1.0	130
Jan-93	107.28	ND < 0.02	ND < 0.01	ND < 0.005	0.096	ND < 2.5	ND < 5.0	ND < 5.0	ND < 5.0	84
Apr-93	115.17	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	12
Jul-93	115.92	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	3.3	2.6	5.9	16
Oct-93	115.67	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.6	4.8	17
Jan-94	115.59	ND<0.02/0.4**	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	10
Apr-94	116.33	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	15
Jul-94	116.91	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	26
Oct-94	110.85	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	1.2	3.5	1.5	12.0	76
Jan-95	111.83	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	72
Apr-95	117.83	ND < 0.02	0.0023	ND < 0.001	ND < 0.02	ND < 0.5	ND < 1.0	1.3	ND < 1.0	57
Jul-95	119.20	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	2.0	5.2	8.8	9.5
Oct-95	115.45	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	1.7	3.3	30
Jan-96	113.41	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	5.1	26
Apr-96	116.73	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.6	3.6	46
Jul-96	116.33	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.8	9.0	12.0	17
Oct-96	112.45	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	5.4	6.2	21
Jan-97	114.19	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	2.6	1.1	4.2	28
Apr-97	117.13	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	4.3	2.1	3.0	13
Jul-97	117.18	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.5	3.7	13
Oct-97	113.60	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	0.57	ND < 1.0	1.7	1.2	24
Jan-98	111.68	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	1.3	ND < 1.0	25
Apr-98	116.82	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	18
Jul-98	118.02	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	25
Oct-98	115.40	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	24
Jan-99	112.48	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.3	ND < 1.0	26
Apr-99	112.49	ND < 0.025	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1.0	ND < 1.0	1.1	ND < 2.0	21
Jul-99	112.31	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	1.3	ND < 1.0	43
Oct-99	104.42	ND < 0.010	0.017	ND < 0.0050	ND < 0.025	ND < 5.0	ND < 5.0	200	ND < 10	150
Jan-00	100.50	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 2.5	ND < 2.5	54	70	170
Apr-00	107.20	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 2.5	ND < 2.5	65	2.5	170
Oct-00	107.46	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	2	ND < 1.0	43
Apr-01	107.14	0.0007	0.017	ND < 0.0050	ND < 0.025	ND <2.0	ND < 2.0	12	3.1	150

** Hexavalent chromium sample or result for MW03 likely switched with MW30 (duplicate of MW04).

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		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 4										
Jan-89	95.21	33.0	400.0	0.028	ND < 0.009	ND < 0.5	10.0	15.0	29.0	120
Apr-89	99.19	43.0	100.0	0.05	0.02	ND < 5	23.0	15.0	50.0	280
Jul-89	98.19	120.0	98.0	0.08	0.06	ND < 14	ND < 20.0	140.0	40.0	290
Oct-89	94.92	110.0	120.0	0.07	ND < 0.05	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	250
Jan-90	95.87	109.0	95.1	0.12	ND < 0.02	ND < 12	ND < 12.0	ND < 12.0	ND < 25.0	220
Apr-90	97.50	81.7	80.7	0.13	0.02	ND < 10	ND < 10.0	ND < 10.0	ND < 20.0	280
Jul-90	99.20	100.0	101.0	0.35	ND < 0.02	ND < 50	ND < 50.0	1600.0	170.0	320
Oct-90	98.33	58.9	48.4	0.23	0.022	ND < 0.5	17.0	230.0	650.0	250
Jan-91	97.68	49.4	65.3	0.26	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	1200.0	180
Apr-91	100.50	23.8	18.4	0.076	ND < 0.02	ND < 0.5	ND < 1.0	730.0	ND < 1.0	170
Jul-91	101.47	39.1	78.5	0.61	ND < 0.02	ND < 0.5	16000.0	6700.0	18000	190
Oct-91	100.91	42.0	40.8	0.21	ND < 0.01	ND < 0.5	6900.0	4100.0	10000	ND < 400
Jan-92	103.33	41.0	34.0	0.47	0.045	ND < 250	18,000	10,000	17,200	ND < 250
Apr-92	105.94	32.2	29.2	0.84	0.053	6.7	7.2	960.0	1010.0	280
Jul-92	106.5	79.9	59.7	0.86	ND < 0.02	ND < 5	ND < 10.0	200.0	280.0	280
Oct-92	103.92	21.6	27.1	0.32	ND < 0.02	71	ND < 10.0	1300.0	230.0	230
Jan-93	107.13	16.4	27.4	0.28	ND < 0.02	ND < 130	10000.0	10000	19000	ND < 250
Apr-93	115	1.8	2.2	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	88.0	13.0	25
Jul-93	115.52	21.0	23.2	0.2	0.056	0.6	2.0	1.8	11.0	100
Oct-93	115.76	* 35.5/99.2	80.3	0.71	ND < 0.2	1.3	ND < 1.0	ND < 1.0	40.0	290
Jan-94	115.42	0.36	36.0	0.23	ND < 0.02	0.81	ND < 1.0	8.3	14.0	130
Apr-94	116.20	26.9	26.4	0.33	ND < 0.02	ND < 0.5	ND < 1.0	4.0	6.5	190
Jul-94	116.76	59.0	41.4	0.20	0.038	0.58	ND < 1.0	ND < 1.0	4.2	340
Oct-94	110.86	60.7	52.8	0.45	ND < 0.02	ND < 5	ND < 10.0	270.0	39.0	390
Jan-95	111.88	28.8	34.3	0.13	0.026	ND < 5	ND < 10.0	350.0	130.0	190
Apr-95	117.69	8.6	9.1	0.21	0.052	ND < 100	1600.0	1700.0	2900.0	67
Jul-95	119.05	* 28.1/20.8	29.6	0.27	*.10/ND < 0.02	ND < 10	* 270/410	* 260/380	* 890/1300	90
Oct-95	115.35	**30.8	28.9	0.38	ND < 0.02	ND < 2.5	ND < 5.0	75.0	21.0	150
Jan-96	113.37	25.7	32.4	0.19	ND < 0.02	ND < 50	100.0	2100.0	1400.0	160
Apr-96	116.65	* 32.2/24.6	38.0	0.60	ND < 0.02	ND < 25	680.0	1300.0	1400.0	130
Jul-96	116.17	50	58.9	0.28	ND < 0.02	ND < 50	ND < 100.0	1000.0	270.0	140
Oct-96	112.38	63.8	75.7	0.46	ND < 0.04	ND < 50	380.0	1100.0	1900.0	310
Jan-97	114.07	*45.9/34.9	34.5	0.54	0.02	ND < 6.2	ND < 12.0	1100.0	ND < 12.0	330
Apr-97	116.96	27.3	18.8	0.53	ND < 0.02	ND < 12	35.0	1300.0	620.0	150
Jul-97	117.04	36.0	35.2	0.62	ND < 0.02	ND < 5	ND < 10.0	810.0	110.0	150
Oct-97	113.46	73.8	85.3	0.64	ND < 0.08	ND < 5	ND < 10.0	460.0	31.0	230
Jan-98	111.66	39.2	44.0	0.53	ND < 0.02	ND < 5	ND < 10.0	530.0	420.0	180
Apr-98	116.69	7.2	14.1	0.43	ND < 0.02	2.9	ND < 5.0	320.0	ND < 5.0	92
Jul-98	117.95	16.3	18.9	0.32	ND < 0.02	ND < 12	ND < 25.0	1200.0	300.0	120
Oct-98	115.31	34.1	36.2	0.44	0.030	ND < 6.2	ND < 12.0	740.0	240.0	120
Jan-99	112.41	78.6	85.2	0.58	ND < 0.04	ND < 5	ND < 10	520.0	31.0	260
Apr-99	112.43	*0.57/4.6	42.8	0.41	ND < 0.05	3.5	ND < 2.5	220	9.9	190
Jul-99	112.33	41.1	49.7	0.42	ND < 0.050	ND < 10	ND < 10	670	67	140
Oct-99	104.49	58.2	105	0.59	ND < 0.075	ND < 5.0	ND < 5.0	92	11	210
Jan-00	100.66	76.3	60.0	0.32	ND < 0.050	5.1	ND < 2.5	ND < 2.5	6.0	160
Apr-00	**107.01**	**32.9**	**39.3**	**0.55**	**ND < 0.050**	**ND < 5.0**	**ND < 5.0**	**46**	**8.6**	**240**
Oct-00	**107.42**	**45.6**	**42.1**	**0.52**	**ND < 0.050**	**ND < 50**	**2500**	**2500**	**ND < 50**	**170**
Apr-01	107.02	11.0	16.8	0.38	ND < 0.025	ND < 50	120	3,100	830	150

* 35.5/99.2 = original sample/duplicate sample (both results presented because duplicate result deviation is >20%)

** Analyzed after holding time had expired.

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		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 6B										
Jan-89	95.12	ND < 0.01	ND < 0.014	ND < 0.003	ND < 0.009	ND < 0.01	ND < 0.0	ND < 0.0	ND < 0.0	57
Apr-89	99.11	ND < 0.05	0.06	ND < 0.01	ND < 0.02	ND < 0.7	ND < 1.0	ND < 1.0	ND < 1.0	37
Jul-89	98.39	ND < 0.05	0.04	ND < 0.01	ND < 0.02	ND < 0.7	ND < 1.0	ND < 1.0	ND < 1.0	29
Oct-89	95.35	ND < 0.05	ND < 0.02	ND < 0.01	ND < 0.05	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	29
Jan-90	96.1	ND < 0.02	ND < 0.01	ND < 0.01	ND < 0.02	ND < 0.5	ND < 0.5	ND < 0.5	ND < 1.0	46
Apr-90	97.76	ND < 0.02	0.02	ND < 0.005	ND < 0.02	ND < 2.5	ND < 2.5	ND < 2.5	ND < 5.0	61
Jul-90	99.28	ND < 0.02	0.02	ND < 0.01	ND < 0.02	ND < 0.5	ND < 0.5	ND < 0.5	ND < 1.0	51
Oct-90	98.45	ND < 0.02	0.012	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	52
Jan-91	97.87	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	59
Apr-92	105.86	ND < 0.02	0.014	ND < 0.005	ND < 0.02	ND < 0.5	ND < 0.5	1.1	0.8	19
Jul-92	106.57	ND < 0.02	0.019	ND < 0.005	0.054	ND < 0.5	ND < 0.5	ND < 1.0	ND < 1.0	10
Oct-92	104.12	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	12.0	2.9	13.0	9.3
Jan-93	107.23	ND < 0.02	0.011	ND < 0.005	0.038	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	6.9
Apr-93	114.64	ND < 0.02	0.014	ND < 0.005	ND < 0.02	ND < 0.5	64.0	26.0	88.0	2.6
Jul-93	115.34	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	2.2	2.0	5.5	2.7
Oct-93	115.46	ND < 0.02	0.011	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	5.9
Jan-94	115.37	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	2.7
Apr-94	116.15	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	2.0
Jul-94	116.67	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.1	ND < 1.0	1.9	2.9
Oct-94	111.13	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.5	ND < 1.0	8.2	1.5
Jan-95	112.19	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1	110.0	89.0	110.0	8.6
Apr-95	117.42	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.6	9.1	6.2	2.3
Jul-95	118.93	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.1	4.0	5.1	8.8
Oct-95	115.45	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	1.0	2.6
Jan-96	113.47	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1	28.0	27.0	53.0	14
Apr-96	116.65	ND < 0.02	0.011	ND < 0.005	ND < 0.02	ND < 1	4.2	37.0	50.0	2.9
Jul-96	116.18	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.3	3.5	2.3
Oct-96	112.66	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.0	2.1	2.8	6.1
Jan-97	114.20	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	4.3	4.3	6.4	5.0
Apr-97	116.95	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	3.6	1.7	ND < 1.0	5.2
Jul-97	117.01	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	6.6
Oct-97	113.71	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	6.4
Jan-98	112.06	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	15.0	32.0	39.0	17.0
Apr-98	116.76	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.6	4.2	6.0	7.7
Jul-98	117.95	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	4.3
Oct-98	114.83	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	9.9
Jan-99	112.74	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	5.0	24.0	29.0	17.0
Apr-99	112.56	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1.0	19	42	33.9	31
Jul-99	112.43	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND <1.0	ND <1.0	1.2	ND < 1.0	8.2
Oct-99	105.04	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	4.8	ND < 1.0	12.0
Jan-00	101.26	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND <1.0	ND <1.0	2.0	ND < 1.0	13.0
Apr-00	107.21	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND <1.0	ND <1.0	1.1	ND < 1.0	7.0
Oct-00	107.55	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	9.2
Apr-01	107.01	0.0051	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	5.9

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		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 7										
Jan-89	89.47	ND < 0.01	ND < 0.014	ND < 0.003	ND < 0.009	ND < 0.5	1.4	1.2	3.6	35
Apr-89	98.83	ND < 0.05	0.02	ND < 0.01	ND < 0.02	ND < 0.7	ND < 1.0	ND < 1.0	ND < 1.0	47
Jul-89	97.90	ND < 0.05	0.03	ND < 0.01	ND < 0.05	ND < 0.7	ND < 1.0	ND < 1.0	ND < 1.0	25
Oct-89	94.72	ND < 0.05	ND < 0.02	ND < 0.01	ND < 0.05	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	44
Jan-90	95.58	ND < 0.02	ND < 0.01	ND < 0.01	ND < 0.02	ND < 2.5	ND < 2.5	ND < 2.5	ND < 5.0	39
Apr-90	97.32	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	ND < 2.5	ND < 2.5	ND < 5.0	46
Jul-90	98.85	ND < 0.02	ND < 0.01	ND < 0.01	ND < 0.02	ND < 1	ND < 1.0	ND < 1.0	ND < 2.0	34
Oct-90	98.02	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	19
Jan-91	97.41	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	1.8
Apr-91	100.06	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	30
Jul-91	101.20	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	53
Oct-91	100.62	ND < 0.02	ND < 0.01	ND < 0.005	0.01	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	54
Jan-92	102.90	0.07	ND < 0.0081	ND < 0.0027	0.14	ND < 1	ND < 1.0	ND < 1.0	ND < 1.0	120
Apr-92	105.54	ND < 0.02	0.013	ND < 0.005	0.032	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	55
Jul-92	103.13	ND < 0.02	0.095	ND < 0.005	0.21	ND < 1	ND < 2.0	ND < 2.0	ND < 2.0	53
Oct-92	103.68	ND < 0.02	0.063	ND < 0.005	0.65	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	98
Jan-93	106.82	ND < 0.02	0.033	ND < 0.005	0.19	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	73
Apr-93	114.54	ND < 0.02	0.011	ND < 0.005	ND < 0.02	ND 1.2	ND < 2.5	90.0	5.6	23
Jul-93	115.14	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 5	ND < 10.0	210.0	ND < 10.0	43
Oct-93	115.23	ND < 0.2	ND < 0.01	ND < 0.005	0.02	0.82	ND < 1.0	7.2	ND < 1.0	44
Jan-94	115.08	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	1.4	ND < 1.0	33.0	ND < 1.0	53
Apr-94	115.88	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND< 2.5	ND < 5.0	200.0	ND < 5.0	96
Jul-94	116.44	ND < 0.02	ND < 0.01	ND < 0.005	0.023	0.88	ND < 1.0	7.7	1.2	140
Oct-94	110.69	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	5.1	5.5	98
Jan-95	111.59	ND < 0.02	ND < 0.01	ND < 0.005	0.026	ND < 0.5	7.0	8.7	10.0	170
Apr-95	117.24	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	1.3	ND < 1.0	26
Jul-95	118.63	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.1	3.4	53
Oct-95	115.08	ND < 0.02	0.014	ND < 0.005	0.079	0.74	ND < 1.0	3.8	1.4	98
Jan-96	112.98	ND < 0.02	ND < 0.01	ND < 0.005	0.043	1.0	4.2	4.9	10.0	85
Apr-96	116.39	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.3	11.0	14.0	37
Jul-96	115.83	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	1.0	ND < 1.0	1.6	2.7	87
Oct-96	112.17	ND < 0.01	ND < 0.01	ND < 0.005	0.036	0.96	ND < 1.0	1.4	1.5	150
Jan-97	113.76	ND < 0.02	ND < 0.01	ND < 0.005	0.029	ND < 0.5	ND < 1.0	1.7	2.8	95
Apr-97	116.62	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.1	1.2	ND < 1.0	63
Jul-97	116.74	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	0.56	ND < 1.0	ND < 1.0	ND < 1.0	54
Oct-97	111.27	ND < 0.02	ND < 0.01	ND < 0.005	0.025	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	85
Jan-98	111.47	ND < 0.02	0.01	ND < 0.005	0.044	ND < 0.5	2.2	5.2	6.8	97
Apr-98	116.38	ND < 0.02	0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	1.6	1.8	23
Jul-98	117.62	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	53
Oct-98	115.06	ND < 0.02	ND < 0.01	ND < 0.005	0.042	0.68	ND < 1.0	ND < 1.0	ND < 1.0	88
Jan-99	112.28	ND < 0.02	ND < 0.01	0.0056	0.05	ND < 1.2	ND < 2.5	ND < 2.5	ND < 2.5	160
Apr-99	112.11	ND < 0.01	ND < 0.01	ND < 0.005	0.042	ND < 2.0	3.0	11	6.8	80
Jul-99	112.09	ND < 0.020	ND < 0.020	ND < 0.010	0.068	ND < 1.0	ND < 1.0	1.3	ND < 1.0	65
Oct-99	104.50	ND < 0.010	ND < 0.010	ND < 0.0050	0.071	ND < 2.0	ND < 2.0	ND < 2.0	ND < 2.0	130
Jan-00	100.67	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	47
Apr-00	106.84	ND < 0.010	ND < 0.010	ND < 0.0050	0.035	ND < 1.0	ND < 1.0	1.2	ND < 1.0	48
Oct-00	107.24	ND < 0.020	ND < 0.010	ND < 0.0050	0.057	ND < 2.5	ND < 2.5	ND < 2.5	ND < 2.5	110
Apr-01	106.70	0.001	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	78

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		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW-9										
Jan-89	95.55	0.45	0.33	ND < 0.003	ND < 0.009	ND < 0.5	ND < 0.5	ND < 0.5	ND < 1.0	55
Apr-89	99.67	ND < 0.02	0.06	ND < 0.01	ND < 0.02	ND < 0.7	ND < 1.0	ND < 1.0	ND < 1.0	24
Jul-89	98.77	ND < 0.05	0.17	ND < 0.01	0.02	ND < 0.7	ND < 1.0	ND < 1.0	ND < 1.0	57
Oct-89	95.62	2.5	1.8	ND < 0.01	ND < 0.05	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	110
Jan-90	96.44	2.28	2.2	ND < 0.01	ND < 0.02	ND < 2.5	ND < 2.5	ND < 2.5	ND < 5.0	100
Apr-90	98.26	0.8	0.81	ND < 0.005	ND < 0.02	ND < 2.5	ND < 2.5	ND < 2.5	ND < 5.0	150
Jul-90	99.78	0.03	0.04	ND < 0.01	ND < 0.02	ND < 2.5	ND < 2.5	ND < 2.5	ND < 5.0	64
Oct-90	98.69	0.25	0.19	ND < 0.005	0.062	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	17
Jan-91	98.04	0.124	0.085	ND < 0.005	ND < 0.02	ND < 0.5	6.6	1.4	9.0	26
Apr-91	100.83	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	26
Jul-91	101.88	ND < 0.02	0.027	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	99.0	ND < 1.0	41
Oct-91	101.30	0.05	0.07	ND < 0.005	ND < 0.01	ND < 0.5	ND < 1.0	94.0	ND < 1.0	120
Jan-92	103.62	ND < 0.05	ND < 0.0081	ND < 0.0027	0.031	ND < 1	ND < 1.0	1220.0	92.0	45
Apr-92	106.27	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.05	2800.0	3600.0	6190.0	52
Jul-92	106.93	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.05	34000.0	7900.0	24000	ND < 1000
Oct-92	104.3	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1000	83000.0	13000	58000	ND < 1000
Jan-93	107.56	ND < 0.02	0.057	ND < 0.005	0.053	ND < 50	400.0	3900.0	5300.0	ND < 100
Apr-93	115.26	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 50	5100.0	4000.0	9200.0	110
Jul-93	115.81	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 16	ND < 33.0	160.0	74.0	1100
Oct-93	115.79	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	ND < 5.0	120.0	45.0	390
Jan-94	115.76	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 10	48.0	290.0	220.0	230
Apr-94	116.51	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 500	17000.0	12000	32000	270
Jul-94	117.03	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1000	56000.0	15000	40000	200
Oct-94	111.17	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 500	57000.0	11000	34000	350
Jan-95	112.25	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 250	8200.0	9800.0	2000.0	310
Apr-95	117.92	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 50	ND < 100.0	650.0	480.0	670
Jul-95	119.31	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 10	69.0	780.0	340.0	540
Oct-95	115.67	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 25	110.0	670.0	1900.0	320
Jan-96	113.73	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 50	100.0	4300.0	6100.0	500
Apr-96	117.00	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	3.3	5.5	24.0	22.0	580
Jul-96	116.49	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	4.6	ND < 2.0	42.0	4.3	570
Oct-96	112.73	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 50	ND < 100.0	2900.0	350.0	470
Jan-97	114.46	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	ND < 5.0	ND < 5.0	ND < 5.0	400
Apr-97	117.29	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 5	ND < 10.0	18.0	ND < 10.0	770
Jul-97	117.34	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 25	ND < 50.0	2500.0	860.0	850
Oct-97	113.75	ND < 0.02	0.048	ND < 0.005	ND < 0.02	ND < 25	150.0	1900.0	4800.0	ND < 50
Jan-98	112.06	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 5	ND < 10.0	690.0	260.0	270
Apr-98	117.07	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 5	ND < 10,0	23.0	ND < 10.0	390
Jul-98	118.26	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 12	ND < 25.0	73.0	ND < 25.0	1300
Oct-98	115.49	3.3	1.3	0.0075	0.34	7.4	ND < 12.0	390.0	ND < 12.0	1200
Jan-99	112.68	3.3	2.4	ND < 0.005	ND < 0.02	ND < 6.2	ND < 12.0	100.0	83.0	550
Apr-99	112.77	ND < 0.01	0.64	ND < 0.005	ND < 0.025	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	350
Jul-99	112.57	5.8	5.6	ND < 0.010	ND < 0.050	ND < 25	ND < 25	ND < 25	ND < 25	810
Oct-99	104.91	4.0	4.2	ND < 0.0050	ND < 0.025	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	280
Jan-00	101.15	14.1	13.9	ND < 0.0050	ND < 0.025	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	170
Apr-00	107.56	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	370
Oct-00	107.81	ND < 0.020	0.014	ND < 0.0050	ND < 0.025	ND < 5.0	ND < 5.0	29.0	ND < 5.0	160
Apr-01	107.39	0.0043	0.011	ND < 0.0050	ND < 0.025	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	200

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Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 11										
Jan-89	95.97	ND < 0.01	ND < 0.014	ND < 0.003	ND < 0.009	ND < 0.5	ND < 0.5	43.0	1.5	34
Apr-89	99.85	ND < 0.02	0.04	ND < 0.01	ND < 0.02	ND < 500	7500.0	2600.0	11000	39
Jul-89	98.95	ND < 0.05	ND < 0.02	ND < 0.01	0.13	ND < 7	ND < 10.0	ND < 10.0	90.0	29
Oct-89	95.77	ND < 0.05	ND < 0.02	ND < 0.01	ND < 0.05	ND < 5	ND < 10.0	200.0	ND < 10.0	35
Jan-90	96.72	ND < 0.02	ND < 0.01	ND < 0.01	ND < 0.02	ND < 5	ND < 5.0	83.0	ND < 10.0	46
Apr-90	98.44	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	2.6	370.0	150.0	33
Jul-90	100.00	ND < 0.02	ND < 0.01	ND < 0.01	0.03	ND < 25	440.0	1000.0	760.0	65
Oct-90	98.97	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	15000.0	3000.0	10000	ND < 1
Jan-91	98.29	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	15000.0	4700.0	12000	ND < 1
Apr-91	101.17	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	8500.0	3300.0	7500.0	63
Jul-91	102.19	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	57.0	520.0	220.0	61
Oct-91	101.61	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.01	ND < 0.5	140.0	2000.0	660.0	110
Jan-92	104.09	0.10	ND < 0.0081	ND < 0.0027	0.02	ND < 1	7.3	230.0	26.0	85
Apr-92	106.61	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.01	ND < 0.05	1.7	130.0	2.3	70
Jul-92	107.12	ND < 0.02	0.02	ND < 0.005	0.09	ND < 0.05	ND < 0.1	17.0	ND < 0.1	160
Oct-92	104.55	ND < 0.02	0.011	ND < 0.005	ND < 0.01	ND < 0.05	ND < 0.1	11.0	ND < 0.1	160
Jan-93	108.27	ND < 0.02	0.013	ND < 0.005	0.088	ND < 1.2	ND < 2.5	110.0	ND < 2.5	86
Apr-93	115.6	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.05	ND < 1.0	2.0	ND < 1.0	59
Jul-93	116.07	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.05	2.5	1.8	6.4	230
Oct-93	116.01	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.1	3.1	150
Jan-94	116.03	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.5	2.8	190
Apr-94	116.83	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	80
Jul-94	117.23	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	1.6	180
Oct-94	111.30	ND < 0.02	0.011	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	4.5	ND < 1.0	360
Jan-95	112.53	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 10	660.0	850.0	1100.0	660
Apr-95	118.26	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 50	ND < 100.0	1900.0	1000.0	74
Jul-95	119.51	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	ND < 5.0	160.0	37.0	140
Oct-95	115.80	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	5.8	2.2	180
Jan-96	113.98	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 25	520.0	460.0	1000.0	620
Apr-96	117.37	ND < 0.02	ND < 0.01	ND < 0.005	0.023	ND < 25	160.0	1100.0	1400.0	240
Jul-96	116.75	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 10	ND < 20.0	460.0	290.0	220
Oct-96	112.95	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.9	20.0	8.0	250
Jan-97	114.78	ND < 0.02	ND < 0.01	ND < 0.005	0.029	ND < 0.5	9.4	84.0	88.0	160
Apr-97	117.60	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	ND < 5.0	120.0	8.2	370
Jul-97	117.61	ND < 0.02	ND < 0.01	ND < 0.005	0.15	ND < 2.5	ND < 5.0	8.3	ND < 5.0	240
Oct-97	114.02	ND < 0.02	ND < 0.01	ND < 0.005	0.1	ND < 2.5	ND < 5.0	ND < 5.0	ND < 5.0	350
Jan-98	112.23	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 12	770.0	1800.0	2200.0	390
Apr-98	117.36	ND < 0.02	ND < 0.01	ND < 0.005	0.077	ND < 1.2	63.0	150.0	210.0	180
Jul-98	118.57	ND < 0.02	ND < 0.01	ND < 0.005	0.077	ND < 1.2	ND < 2.5	41.0	4.8	150
Oct-98	115.91	ND < 0.02	ND < 0.01	ND < 0.005	0.041	ND < 5	ND < 10.0	ND < 10.0	ND < 10.0	430
Jan-99	113.05	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 6.2	260.0	750.0	970.0	690
Apr-99	113.14	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 25	670	1600	1270	480
Jul-99	112.88	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 10	ND < 10	85	ND < 10	740
Oct-99	105.05	0.057	0.02	ND < 0.0050	ND < 0.025	ND < 10	ND < 10	480	52	650
Jan-00	101.31	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 12	ND < 12	ND < 12	ND < 12	820
Apr-00	107.91	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 12	ND < 12	55	17	1100
Oct-00	108.06	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 50	ND < 50	ND < 50	ND < 50	2900
Apr-01	107.76	ND < 0.0020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 25	ND < 25	48	ND < 25	1700

Shallow Wells
PHIBRO-TECH, INC.
Historical Results
January 1989 to July 2001

		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 14S										
Oct-90	98.07	3.2	2.2	0.018	5.3	ND < 0.5	ND < 1.0	1750.0	ND < 1.0	180
Jan-91	97.38	0.4	0.94	0.007	1	ND < 0.5	ND < 1.0	2800.0	5900.0	108
Apr-91	99.26	0.39	0.41	0.005	0.15	ND < 0.5	ND < 1.0	4100.0	ND < 1.0	84
Jul-91	101.27	0.02	0.31	0.005	0.11	ND < 0.5	ND < 1.0	31.0	ND < 1.0	55
Oct-91	100.66	0.13	0.23	ND < 0.005	0.05	ND < 0.5	ND < 1.0	680.0	ND < 1.0	81
Jan-92	103.08	0.27	0.15	ND < 0.0027	0.093	ND < 1	ND < 1.0	ND < 1.0	ND < 1.0	59
Apr-92	105.70	0.13	0.16	ND < 0.005	0.04	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	56
Jul-92	106.38	0.1	0.33	ND < 0.005	0.56	0.6	ND < 1.0	ND < 1.0	ND < 1.0	44
Oct-92	103.72	0.16	0.54	ND < 0.005	0.72	ND < 1	ND < 1.0	ND < 1.0	ND < 1.0	71
Jan-93	107.00	0.056	0.24	ND < 0.005	0.33	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	56
Apr-93	114.80	ND < 0.02	0.018	ND < 0.005	0.032	ND < 0.5	24.0	40.0	55.0	18
Jul-93	115.36	ND < 0.02	0.20	ND < 0.005	0.023	ND < 0.5	1.3	1.2	3.8	25
Oct-93	115.42	ND < 0.02	0.01	ND < 0.005	0.021	ND < 0.5	ND < 1.0	2.1	3.7	25
Jan-94	115.28	ND < 0.02	0.015	ND < 0.005	0.022	ND < 0.5	ND < 1.0	3.2	1.4	21
Apr-94	116.06	ND < 0.02	0.022	ND < 0.005	ND < 0.020	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	29
Jul-94	116.64	ND < 0.02	0.016	ND < 0.005	ND < 0.020	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	15
Oct-94	110.70	0.035	0.064	ND < 0.005	ND < 0.020	0.53	ND < 1.0	ND < 1.0	ND < 1.0	58
Feb-95	113.10	ND < 0.02	0.016	ND < 0.005	0.020	ND < 50	ND < 100.0	3000.0	690.0	50
Apr-95	117.50	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.020	ND < 5	76.0	120.0	190.0	20
Jul-95	118.93	ND < 0.02	ND < 0.01	0.0055	ND < 0.020	ND < 0.5	2.8	26.0	12.0	22
Oct-95	115.25	0.022	0.046	ND < 0.005	ND < 0.020	ND < 0.5	ND < 1.0	2.1	2.0	35
Jan-96	113.13	ND < 0.02	0.034	ND < 0.005	0.024	ND < 1	4.7	87.0	58.0	42
Apr-96	116.52	0.021	0.028	ND < 0.005	ND < 0.020	ND < 2.5	54.0	120.0	110.0	51
Jul-96	116.04	ND < 0.01	0.069	ND < 0.005	ND < 0.020	0.58	ND < 1.0	20.0	10.0	37
Oct-96	112.22	0.052	0.082	ND < 0.005	ND < 0.020	ND < 0.5	ND < 1.0	13.0	2.9	61
Jan-97	113.85	0.024	0.031	ND < 0.005	ND < 0.020	ND < 2.5	ND < 5.0	470.0	ND < 5.0	90
Apr-97	116.82	ND < 0.02	0.032	0.0053	ND < 0.020	0.58	2.9	91.0	36.0	45
Jul-97	117.21	ND < 0.02	0.016	ND < 0.005	ND < 0.020	ND < 5	ND < 1.0	14.0	1.0	35
Oct-97	113.39	0.1	0.013	ND < 0.005	ND < 0.020	ND < 0.5	ND < 1.0	20.0	1.8	57
Jan-98	111.43	* ND/0.0103	0.018	ND < 0.005	0.020	ND < 0.5	1.1	19.0	5.0	50
Apr-98	116.47	ND < 0.02	0.018	ND < 0.005	0.023	ND < 12	ND < 25.0	1500.0	150.0	38
Jul-98	117.79	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.020	0.51	ND < 1.0	18.0	8.4	18
Oct-98	115.19	0.032	0.044	ND < 0.005	0.027	ND < 1.2	ND < 2.5	120.0	29.0	62
Jan-99	112.31	0.058	0.032	ND < 0.005	ND < 0.020	1.1	ND < 2.0	77.0	64.0	98
Apr-99	112.21	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 12	ND < 12	820	47	84
Jul-99	112.19	ND < 0.020	0.038	ND < 0.0050	0.037	ND < 50	ND < 50	3,000	ND < 50	74
Oct-99	104.31	0.035	0.15	0.006	0.044	2.1	ND < 2.0	120	ND < 2.0	180
Jan-00	100.43	0.11	0.26	0.0094	0.031	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	230
Apr-00	106.91	ND < 0.010	ND < 0.010	ND < 0.0050	0.025	3.2	ND < 2.0	110	ND < 2.0	60
Oct-00	107.06	0.039	0.09	ND < 0.0050	0.087	ND < 5.0	ND < 5.0	230	ND < 5.0	170
Apr-01	106.74	0.057	0.043	ND < 0.0050	0.03	2.1	ND < 2.0	9	ND < 2.0	130

* ND/10.3 = EPA method 7196/EPA Method 218.6 (Sample was analyzed for hexavalent chromium by two methods.)

Shallow Wells
PHIBRO-TECH, INC.
Historical Results
January 1989 to July 2001

		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 15S										
Oct-90	97.71	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	21
Jan-91	97.10	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	4.0	1.6	4.0	13
Apr-91	99.71	ND < 0.02	ND < 0.01	0.011	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	28
Jul-91	100.94	ND < 0.02	ND < 0.01	0.014	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	17
Oct-91	100.35	ND < 0.02	0.01	0.02	0.06	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	13
Jan-92	102.72	ND < 0.051	ND < 0.0081	0.008	0.01	ND < 1	ND < 1.0	ND < 1.0	ND < 1.0	15
Apr-92	105.29	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.01	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	4.1
Jul-92	105.95	ND < 0.02	0.04	0.005	0.27	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	2.9
Oct-92	103.37	ND < 0.02	ND < 0.02	0.0073	0.047	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 1
Jan-93	106.58	ND < 0.02	0.014	0.0085	0.1	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	9.0
Apr-93	114.41	ND < 0.02	0.013	ND < 0.005	ND < 0.02	ND < 0.5	14.0	10.0	22.0	4.6
Jul-93	115.01	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.2	ND < 1.0	2.4	2.4
Oct-93	115.07	ND < 0.04	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	3.2
Jan-94	114.90	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	1.9
Apr-94	115.72	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	3.1
Jul-94	116.31	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	2.1
Oct-94	110.42	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	6.0
Jan-95	111.14	0.048	0.044	ND < 0.005	ND < 0.02	ND < 1	4.0	64.0	27.0	3.7
Apr-95	117.15	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	60.0	82.0	130.0	2.8
Jul-95	118.61	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	2.5	18.0	12.0	5.2
Oct-95	114.45	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	1.0	ND < 1.0	3.9
Jan-96	112.69	ND < 0.02	0.012	ND < 0.005	ND < 0.02	ND < 0.5	1.8	25.0	22.0	3.8
Apr-96	116.09	ND < 0.02	0.015	ND < 0.005	ND < 0.02	ND < 0.5	13.0	40.0	45.0	2.8
Jul-96	115.69	ND < 0.01	0.014	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	9.7	5.4	3.2
Oct-96	111.81	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	2.9	2.6	5.3
Jan-97	113.42	ND < 0.02	0.01	ND < 0.005	ND < 0.02	ND < 0.5	5.5	69.0	1.0	5.1
Apr-97	116.35	ND < 0.02	0.01	ND < 0.005	ND < 0.02	ND < 0.5	9.3	21.0	8.5	3.3
Jul-97	116.60	ND < 0.02	0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	8.2	1.3	4.1
Oct-97	113.08	ND < 0.02	0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	17.0	1.7	5.2
Jan-98	111.06	* ND/0.0177	0.021	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	12.0	3.7	5.0
Apr-98	116.05	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	60.0	7.2	3.1
Jul-98	117.47	ND < 0.02	0.014	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	10.0	2.9	3.4
Oct-98	114.87	ND < 0.02	0.017	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	45.0	12.0	3.9
Jan-99	111.98	0.024	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	19.0	2.2	7.0
Apr-99	111.85	ND < 0.01	0.013	ND < 0.005	ND < 0.025	ND < 1.0	ND < 1.0	23	2.2	4.2
Jul-99	111.89	ND < 0.020	0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	29	23	3.9
Oct-99	104.07	0.014	0.015	ND < 0.0050	ND < 0.025	ND < 2.0	ND < 2.0	12	ND < 2.0	6.7
Jan-00	100.09	ND < 0.020	ND < 0.010	0.012	ND < 0.025	ND < 1.0	ND < 1.0	9.3	ND < 1.0	25
Apr-00	106.56	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	17
Oct-00	106.82	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	17	ND < 1.0	6.7
Apr-01	106.37	0.0053	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	3

* ND/0.0177 = EPA method 7196/EPA Method 218.6 (Sample was analyzed for hexavalent chromium by two methods.)

Shallow Wells
PHIBRO-TECH, INC.
Historical Results
January 1989 to July 2001

		METALS				VOLATILE ORGANIC COMPOUNDS				
Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Hexavalent Chromium (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	Trichloroethene (ug/L)
MW - 16										
Apr-92	105.99	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.01	ND < 0.5	0.7	1.0	1.6	52
Jul-92	106.7	ND < 0.02	0.03	ND < 0.02	0.35	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	35
Oct-92	104.07	ND < 0.02	0.011	ND < 0.005	0.15	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	72
Jan-93	107.3	ND < 0.02	ND < 0.01	ND < 0.005	0.44	ND < 1.2	ND < 2.5	ND < 2.5	ND < 2.5	51
Apr-93	114.9	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 25	55.0	2300.0	1200.0	42
Jul-93	115.54	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 50	ND < 100.0	3100.0	2000.0	15
Oct-93	115.51	ND < 0.04	ND < 0.01	ND < 0.005	ND < 0.02	ND < 5.0	ND < 10.0	340.0	ND < 10.0	24
Jan-94	115.46	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.02	ND < 20.0	1000.0	ND < 20.0	22
Apr-94	116.25	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 10	ND < 20.0	820.0	ND < 20.0	37
Jul-94	116.78	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 25	ND < 50.0	1300.0	730.0	76
Oct-94	111.02	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.5	2.4	9.7	91
Jan-95	112.08	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	ND < 1.0	ND < 1.0	17
Apr-95	117.60	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 5	16.0	36.0	55.0	34
Jul-95	118.99	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 10	ND < 20.0	* 540/370	ND < 20.0	67
Oct-95	115.45	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	1.8	1.3	60
Jan-96	113.49	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	11.0	9.7	26
Apr-96	116.72	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	9.8	30.0	33.0	36
Jul-96	116.24	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	6.6	3.6	110
Oct-96	112.59	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.02	ND < 5	49.0	130.0	230.0	73
Jan-97	114.18	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1	4.6	23.0	ND < 2.0	32
Apr-97	117.01	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1	ND < 2.0	7.2	2.4	31
Jul-97	117.12	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1.2	ND < 2.5	6.5	ND < 2.5	30
Oct-97	113.66	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	ND < 5.0	8.2	ND < 5.0	53
Jan-98	111.92	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1.0	12.0	ND < 3.8	29
Apr-98	116.79	ND < 0.02	ND < 0.01	ND < 0.005	0.023	ND < 0.5	ND < 1.0	28.0	2.7	29
Jul-98	118.00	ND < 0.02	ND < 0.01	ND < 0.005	0.031	ND < 0.5	ND < 1.0	6.0	1.8	28
Oct-98	115.42	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 2.5	ND <5.0	16.0	ND < 5.0	58
Jan-99	112.68	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 1.0	ND < 2.0	11.0	ND < 2.0	36
Apr-99	112.59	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 2.0	ND < 2.0	6.1	ND < 2.0	39
Jul-99	112.43	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 2.0	ND < 2.0	33	ND < 2.0	29
Oct-99	104.81	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 2.0	ND < 2.0	ND < 2.0	ND < 5.0	42
Jan-00	101.03	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	18
Apr-00	107.25	ND < 0.010	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 2.0	ND < 2.0	ND < 2.0	ND < 2.0	26
Oct-00	107.51	ND < 0.020	ND < 0.010	ND < 0.0050	0.3	ND < 2.5	ND < 2.5	7	ND < 2.5	36
Apr-01	106.17	0.0003	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 2.0	ND < 2.0	39.0	11.6	36

ND = Below detection limit as noted

MSL = Mean Sea Level

* 540/370 = original sample/duplicate sample (both results presented because duplicate result deviation is >20%)

P:\2279\2279-111\SPRDSHTS\[TABLEA2.XLS]TAB6-3

Deep Wells

PHIBRO-TECH, INC.

July 2001 Monitoring

Historical Results

Monitor Well No. / Date	Groundwater Elevation (Feet MSL)	Metals: Hexavalent Chromium (mg/L)	Metals: Total Chromium (mg/L)	Metals: Cadmium (mg/L)	Metals: Copper (mg/L)	Volatile Organic Compounds: Benzene (ug/L)	Volatile Organic Compounds: Toluene (ug/L)	Volatile Organic Compounds: Ethyl-Benzene (ug/L)	Volatile Organic Compounds: Total Xylenes (ug/L)	Volatile Organic Compounds: Trichloroethene (ug/L)
MW - 1D										
Jan-99	114.00	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1	1	ND < 1	2
Apr-99	114.01	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 2	2.1
Jul-99	113.67	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 2	2.7
Oct-99	106.55	0.014	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 1	2
Jan-00	152.60	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 1	7.1
Apr-00	108.84	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	1.7	ND < 1	ND < 1	3.3
Oct-00	108.98	ND < 0.020	ND < 0.010	ND < 0.0050	0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	3.1
Apr-01	108.91	0.00066	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	2.7
MW - 4A										
Jan-99	112.63	0.02	0.025	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1	ND < 1	ND < 1	10
Apr-99	112.58	ND < 0.02	0.012	ND < 0.005	ND < 0.025	ND < 1	ND < 1	2.9	1.7	7
Jul-99	112.46	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	670	67	5.2
Oct-99	104.64	0.017	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 2	4.5
Jan-00	152.46	ND < 0.02	0.015	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 1	4.2
Apr-00	107.30	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 1	8.6
Oct-00	107.48	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	7.4
Apr-01	107.11	0.0056	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	19
MW - 6D										
Jan-99	112.78	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	1.2	5.8	6.4	7.1
Apr-99	112.62	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	4	14	11.5	10
Jul-99	112.43	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	4.4	ND < 2	23
Oct-99	105.10	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	2.9	ND < 2	8.8
Jan-00	150.13	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	1.8	ND < 1	9.2
Apr-00	107.25	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	1	ND < 1	4.3
Oct-00	107.59	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	10
Apr-01	107.01	0.0026	ND < 0.010	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	10
MW -15D										
Jan-99	111.92	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.02	ND < 0.5	ND < 1	15	2.1	5.4
Apr-99	111.81	ND < 0.02	0.35	ND < 0.005	ND < 0.025	ND < 1	ND < 1	12	1.6	25
Jul-99	111.74	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	34	ND < 2	9
Oct-99	103.88	ND < 0.01	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	6	ND < 2	5.1
Jan-00	150.96	ND < 0.02	ND < 0.01	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 1	9.7
Apr-00	106.54	0.016	0.013	ND < 0.005	ND < 0.025	ND < 1	ND < 1	ND < 1	ND < 1	13
Oct-00	106.69	ND < 0.020	ND < 0.010	ND < 0.0050	ND < 0.025	1.8	ND < 1.0	2.9	ND < 1.0	8.7
Apr-01	106.32	0.014	0.025	ND < 0.0050	ND < 0.025	ND < 1.0	ND < 1.0	11	2.1	12

ND = Below detection limit as noted

MSL = Mean Sea Level

* 540/370 = original sample/duplicate sample (both results presented because duplicate result deviation is >20%)

P:\2279\2279-111\SPRDSHTS\[TABLEA2.XLS]TAB6-3

Appendix C
Severn Trent Laboratories Analytical Reports

SEVERN TRENT SERVICES

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705-4808

Tel: 714 258 8610
Fax: 714 258 0921
www.stl-inc.com

January 24, 2002

STL LOT NUMBER: E2A160238
NELAP Certification Number: 01118CA
PO/CONTRACT: 2279-11462-111.FLD

Sharon Wallin
Camp, Dresser, McKee
18881 Von Karman, Suite 650
Irvine, CA 92612

Dear Ms. Wallin,

This report contains the analytical results for the two samples received under chain of custody by STL Los Angeles on January 16, 2002. These samples are associated with your PTI - Santa Fe Springs project.

All applicable quality control procedures met method-specified acceptance criteria. See Project Receipt Checklist for container temperature and conditions. Temperature reading between 2 to 6 degrees Celsius is considered within acceptable criteria. Any matrix related anomaly is footnoted within the report. The Hexavalent Chromium by 7199 analysis was performed by Del Mar Analytical. See attached report for any related anomaly.

STL Los Angeles certifies that the tests performed at our facility meet all NELAP requirements for parameters for which accreditation is required or available. The case narrative is an integral part of the report. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions, please feel free to call me at (714) 258-8610 extension 309.

Sincerely,

Diane Suzuki
Project Manager

CC: Project File

FAX 258 0421

Chain of Custody Record

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client: CDM	Project Manager: SHARON WALLIN	Date: 1/15/02	Chain of Custody Number: 050084
Address:	Telephone Number (Area Code)/Fax Number: 949 752 5452	Lab Number:	Page 1 of 1
City: IRVINE State: Zip Code:	Site Contact: JOHN BENNETT Lab Contact:	Analysis (Attach list if more space is needed)	
Project Name and Location (State): PHIBROTECH	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	pH	Cr-Cu-Cd	8260	Cr(VI)	Special Instructions/ Conditions of Receipt
PT-MW1S-052	1/15/02	16:30		X			X						X				
								X					X			
									X					X		
										X					X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other ____ STANDARD TAT

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

000003

STL LOS ANGELES
PROJECT RECEIPT CHECKLIST

Date: 1/16/02

Quantims Lot #: E2A160238
Quote #:
Client Name: CDM
Project:
Received by: MLT
Date/Time Received: 1/16/02 11:45 AM
Delivered by : ☐Client ☐Airborne ☐Fed Ex ☐DHL ☐In-House Courier ☐Rey B.
☐UPS ☐DES ☒Other MATT

Initial / Date

Custody Seal Status: ☐Intact ☐Broken ☒None .... MLT 1/16/02
Custody Seal #(s): ☐No Seal # ....
Sample Container(s): ☒STL-LA ☐Client ☐N/A ....
Temperature(s) (Cooler/blank) in °C: 16.1°C Correction factor -0.1°C (Corrected Temp.) 16°C ....
Thermometer Used : ID: B ☒IR (Infra-red) ☐Digital (Probe) ....
Samples: ☒Intact ☐Broken ☐Other ....
Anomalies: ☒No ☐Yes (See Clouseau) ....
Labeled by ....
Labeling checked by ....

Turn Around Time: ☐RUSH-24HR ☐RUSH-48HR ☐RUSH-72HR ☒NORMAL ....
Short-Hold Notification: ☐Ph ☐Wet Chem ☐Metals (Filter/Pres) ☐Encore ☒N/A ....
Outside Analysis(es) (Test/Lab/Date Sent Out) :

LEAVE NO BLANK SPACES ; USE N/A

Fraction	1	2-FB									PH
VOAh /*	3	3									N/A
125ml PB	1										—
250ml PB	1										>12
500ml PB	1										<2

h:HCl — na:Sodium Hydoxide — znna:Zinc Acetate/Sodium Hydroxide — s: H2SO4 — n:HNO3 — n/f:HNO3-Field filtered — n/f/l:HNO3-Lab filtered
CGJ:Clear Glass Jar — CGB:Clear Glass Bottle — AGJ:Amber Glass Jar — AGB:Amber Glass Bottle — PB: Poly Bottle — E:Encore Sampler — V:VOA — SL:Sleeve
* Number of VOA's w/ Headspace present

LOGGED BY/DATE: MB 01/16/02 REVIEWED BY/DATE: [signature] 1/16/02

PRC Ver. 6 081401 XRF — QANACA01\W:\Precis\Sample Control Forms

SEVERN
TRENT
SERVICES

Analytical Report

EXECUTIVE SUMMARY - Detection Highlights

E2A160238

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
PTI-MW015-052 01/15/02 16:30 001				
1,2-Dichloroethane	1.3	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	1.2	1.0	ug/L	SW846 8260B
Tetrachloroethene	1.6	1.0	ug/L	SW846 8260B
Trichloroethene	7.0	1.0	ug/L	SW846 8260B
pH	7.1	0.10	No Units	SW846 9040B

METHODS SUMMARY

E2A160238

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040B	SW846 9040B
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3005A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

E2A160238

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ERQTN	001	PTI-MW015-052	01/15/02	16:30
ERQVA	002	TRIP BLANK	01/15/02	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW015-052

GC/MS Volatiles

Lot-Sample #...:	E2A160238-001	**Work Order #...:**	ERQTN1AA	**Matrix.........:**	WATER
Date Sampled...:	01/15/02 16:30	**Date Received..:**	01/16/02 10:45	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	19:23		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	**1.3**	**1.0**	**ug/L**	**0.40**
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	**1.2**	**1.0**	**ug/L**	**0.30**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	**1.6**	**1.0**	**ug/L**	**0.30**
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**7.0**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	99	(75 - 130)
1,2-Dichloroethane-d4	100	(65 - 135)
Toluene-d8	96	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...:	E2A160238-002	**Work Order #...:**	ERQVA1AA	**Matrix.........:**	WATER
Date Sampled...:	01/15/02	**Date Received..:**	01/16/02 10:45	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	18:53		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	ND	1.0	ug/L	0.30
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	ND	1.0	ug/L	0.30
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	92	(75 - 130)
1,2-Dichloroethane-d4	90	(65 - 135)
Toluene-d8	89	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW015-052

General Chemistry

Lot-Sample #...: E2A160238-001 **Work Order #...:** ERQTN **Matrix.........:** WATER
Date Sampled...: 01/15/02 16:30 **Date Received..:** 01/16/02 10:45

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**7.1**	**0.10**	**No Units**	**SW846 9040B**	**01/16/02**	**2016391**

Analysis Time..: 13:28 MS Run #.......: 2016175 MDL...........:

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW015-052

TOTAL Metals

Lot-Sample #...: E2A160238-001 **Matrix.......:** WATER
Date Sampled...: 01/15/02 16:30 **Date Received..:** 01/16/02 10:45

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017290						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERQTN1AC
		Analysis Time..: 13:00		MS Run #.......: 2017119	MDL............: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERQTN1AD
		Analysis Time..: 13:00		MS Run #.......: 2017119	MDL............: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERQTN1AE
		Analysis Time..: 13:00		MS Run #.......: 2017119	MDL............: 0.0040	

SEVERN TRENT SERVICES

QA/QC

QC DATA ASSOCIATION SUMMARY

E2A160238

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 9040B		2016391	2016175
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017290	2017119
002	WATER	SW846 8260B		2017453	2017236

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E2A160238 **Work Order #...:** ERV0L1AA **Matrix.........:** WATER
MB Lot-Sample #: E2A170000-453
Prep Date......: 01/16/02 **Analysis Time..:** 17:53
Analysis Date..: 01/16/02 **Prep Batch #...:** 2017453

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	91	(75 - 130)
1,2-Dichloroethane-d4	92	(65 - 135)
Toluene-d8	90	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: E2A160238 **Matrix.........:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: E2A170000-290 **Prep Batch #...:** 2017290						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERTRH1AA
		Analysis Time..: 11:45				
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERTRH1AC
		Analysis Time..: 11:45				
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERTRH1AD
		Analysis Time..: 11:45				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A160238 **Work Order #...:** ERV0L1AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A170000-453
Prep Date......: 01/16/02 **Analysis Date..:** 01/16/02
Prep Batch #...: 2017453 **Analysis Time..:** 16:54

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**10.1**	**ug/L**	**101**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**10.4**	**ug/L**	**104**	**SW846 8260B**
Toluene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
Trichloroethene	**10.0**	**10.6**	**ug/L**	**106**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 130)
1,2-Dichloroethane-d4	83	(65 - 135)
Toluene-d8	84	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E2A160238 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH			Work Order #: ERQ6C1AA	LCS Lot-Sample#: E2A160000-391			
	9.18	9.20	No Units	100	SW846 9040B	01/16/02	2016391
			Analysis Time..: 13:25				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E2A160238 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A170000-290 **Prep Batch #...:** 2017290							
Cadmium	0.0500	0.0489	mg/L	98	SW846 6010B	01/17-01/18/02	ERTRH1AE
			Analysis Time..: 11:51				
Chromium	0.200	0.196	mg/L	98	SW846 6010B	01/17-01/18/02	ERTRH1AF
			Analysis Time..: 11:51				
Copper	0.250	0.244	mg/L	97	SW846 6010B	01/17-01/18/02	ERTRH1AG
			Analysis Time..: 11:51				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A160238 **Work Order #...:** ERV0L1AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A170000-453
Prep Date......: 01/16/02 **Analysis Date..:** 01/16/02
Prep Batch #...: 2017453 **Analysis Time..:** 16:54

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**101**	**(75 - 120)**	**SW846 8260B**
Chlorobenzene	**102**	**(75 - 120)**	**SW846 8260B**
1,1-Dichloroethene	**104**	**(70 - 140)**	**SW846 8260B**
Toluene	**102**	**(75 - 125)**	**SW846 8260B**
Trichloroethene	**106**	**(70 - 130)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 130)
1,2-Dichloroethane-d4	83	(65 - 135)
Toluene-d8	84	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A160238 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH		Work Order #: ERQ6C1AA LCS Lot-Sample#: E2A160000-391			
	100	(90 - 110)	SW846 9040B	01/16/02	2016391
		Analysis Time..: 13:25			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: E2A160238 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A170000-290 **Prep Batch #...:** 2017290					
Cadmium	98	(80 - 120)	SW846 6010B	01/17-01/18/02	ERTRH1AE
		Analysis Time..: 11:51			
Chromium	98	(85 - 120)	SW846 6010B	01/17-01/18/02	ERTRH1AF
		Analysis Time..: 11:51			
Copper	97	(80 - 120)	SW846 6010B	01/17-01/18/02	ERTRH1AG
		Analysis Time..: 11:51			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E2A160238 **Matrix.........:** WATER
Date Sampled...: 01/15/02 14:00 **Date Received..:** 01/15/02 16:40

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A150281-001 **Prep Batch #...:** 2017290									
Cadmium									
	ND	0.0500	0.0494	mg/L	99		SW846 6010B	01/17-01/18/02	ERN901AG
	ND	0.0500	0.0496	mg/L	99	0.42	SW846 6010B	01/17-01/18/02	ERN901AH
			Analysis Time..: 12:23						
			MS Run #.......: 2017119						
Chromium									
	ND	0.200	0.198	mg/L	99		SW846 6010B	01/17-01/18/02	ERN901AJ
	ND	0.200	0.200	mg/L	100	1.5	SW846 6010B	01/17-01/18/02	ERN901AK
			Analysis Time..: 12:23						
			MS Run #.......: 2017119						
Copper									
	ND	0.250	0.250	mg/L	98		SW846 6010B	01/17-01/18/02	ERN901AL
	ND	0.250	0.250	mg/L	98	0.08	SW846 6010B	01/17-01/18/02	ERN901AM
			Analysis Time..: 12:23						
			MS Run #.......: 2017119						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A160238 **Work Order #...:** ERRL51AH-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A160336-005 ERRL51AJ-MSD
Date Sampled...: 01/16/02 13:55 **Date Received..:** 01/16/02 17:00 **MS Run #.......:** 2017236
Prep Date......: 01/17/02 **Analysis Date..:** 01/17/02
Prep Batch #...: 2017453 **Analysis Time..:** 02:18

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10.0**	**10.4**	**ug/L**	**104**		**SW846 8260B**
	ND	**10.0**	**10.4**	**ug/L**	**104**	**0.19**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**10.5**	**ug/L**	**105**		**SW846 8260B**
	ND	**10.0**	**11.0**	**ug/L**	**110**	**4.5**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**9.93**	**ug/L**	**99**		**SW846 8260B**
	ND	**10.0**	**9.68**	**ug/L**	**97**	**2.6**	**SW846 8260B**
Toluene	**ND**	**10.0**	**10.3**	**ug/L**	**103**		**SW846 8260B**
	ND	**10.0**	**10.7**	**ug/L**	**107**	**3.8**	**SW846 8260B**
Trichloroethene	**5.1**	**10.0**	**16.2**	**ug/L**	**111**		**SW846 8260B**
	5.1	**10.0**	**16.4**	**ug/L**	**113**	**1.2**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 130)
	94	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
	99	(65 - 135)
Toluene-d8	88	(80 - 130)
	92	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: E2A160238 **Matrix.........:** WATER
Date Sampled...: 01/15/02 14:00 **Date Received..:** 01/15/02 16:40

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A150281-001 **Prep Batch #...:** 2017290							
Cadmium	99	(80 - 120)			SW846 6010B	01/17-01/18/02	ERN901AG
	99	(80 - 120)	0.42	(0-20)	SW846 6010B	01/17-01/18/02	ERN901AH
		Analysis Time..: 12:23					
		MS Run #.......: 2017119					
Chromium	99	(85 - 120)			SW846 6010B	01/17-01/18/02	ERN901AJ
	100	(85 - 120)	1.5	(0-20)	SW846 6010B	01/17-01/18/02	ERN901AK
		Analysis Time..: 12:23					
		MS Run #.......: 2017119					
Copper	98	(80 - 120)			SW846 6010B	01/17-01/18/02	ERN901AL
	98	(80 - 120)	0.08	(0-20)	SW846 6010B	01/17-01/18/02	ERN901AM
		Analysis Time..: 12:23					
		MS Run #.......: 2017119					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A160238 **Work Order #...:** ERRL51AH-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A160336-005 ERRL51AJ-MSD
Date Sampled...: 01/16/02 13:55 **Date Received..:** 01/16/02 17:00 **MS Run #.......:** 2017236
Prep Date......: 01/17/02 **Analysis Date..:** 01/17/02
Prep Batch #...: 2017453 **Analysis Time..:** 02:18

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**104**	**(75 - 120)**			**SW846 8260B**
	104	**(75 - 120)**	**0.19**	**(0-25)**	**SW846 8260B**
Chlorobenzene	**105**	**(75 - 120)**			**SW846 8260B**
	110	**(75 - 120)**	**4.5**	**(0-25)**	**SW846 8260B**
1,1-Dichloroethene	**99**	**(70 - 140)**			**SW846 8260B**
	97	**(70 - 140)**	**2.6**	**(0-25)**	**SW846 8260B**
Toluene	**103**	**(75 - 125)**			**SW846 8260B**
	107	**(75 - 125)**	**3.8**	**(0-25)**	**SW846 8260B**
Trichloroethene	**111**	**(70 - 130)**			**SW846 8260B**
	113	**(70 - 130)**	**1.2**	**(0-25)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 130)
	94	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
	99	(65 - 135)
Toluene-d8	88	(80 - 130)
	92	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A160238 **Work Order #...:** ERQTN-SMP ERQTN-DUP **Matrix.......:** WATER

Date Sampled...: 01/15/02 16:30 **Date Received..:** 01/16/02 10:45

% Moisture.....: **Dilution Factor:** **Initial Wgt/Vol:**

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH						SD Lot-Sample #:	E2A160238-001	
	7.1	7.1	No Units	0.0	(0-0.0)	SW846 9040B	01/16/02	2016391

Analysis Time..: 13:28 MS Run Number..: 2016175

SEVERN
TRENT
SERVICES

Subcontract Reports

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
7277 Hayvenhurst, Suite B-12, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705

Attention: Diane Suzuki
Project: E2A160238

Sampled: 01/15/02
Received: 01/16/02
Reported: 01/20/02

This laboratory report is confidential and is intended for the sole use of Del Mar Analytical and its client. This entire report was reviewed and approved for release.

CA ELAP Certificate #1197
AZ DHS License #AZ0428

Del Mar Analytical, Irvine
Pat Abe
Project Manager

000029

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160238

Report Number: ILA0509

Sampled: 01/15/02
Received: 01/16/02

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l				
Sample ID: ILA0509-01 (PTI-MW01S-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	ND	1	1/16/2002	1/16/2002	

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

Del Mar Analytical

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160238

Report Number: ILA0509

Sampled: 01/15/02
Received: 01/16/02

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I2A1638 Extracted: 01/16/02										
Blank Analyzed: 01/16/02 (I2A1638-BLK1)										
Chromium VI	ND	0.0020	mg/l							
LCS Analyzed: 01/16/02 (I2A1638-BS1)										
Chromium VI	0.0474	0.0020	mg/l	0.0500		95	90-110			
Matrix Spike Analyzed: 01/16/02 (I2A1638-MS1)					**Source: ILA0509-01**					
Chromium VI	0.0515	0.0020	mg/l	0.0500	ND	99	70-130			
Matrix Spike Dup Analyzed: 01/16/02 (I2A1638-MSD1)					**Source: ILA0509-01**					
Chromium VI	0.0521	0.0020	mg/l	0.0500	ND	100	70-130	1	15	

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160238

Report Number: ILA0509

Sampled: 01/15/02
Received: 01/16/02

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

NR Not reported.

RPD Relative Percent Difference

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Chain of Custody Record

SEVERN TRENT SERVICES Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client	Project Manager	Date	Chain of Custody Number
STL Los Angeles	Diane Suzuki	1-16-02	052230

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
1721 S Grand Ave			Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
Santa Ana	CA	92705		

Project Name and Location (State): E2A160238

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Analysis (Attach list if more space is needed): Cr6 by 7199												Special Instructions/ Conditions of Receipt
PTI-MW015-052	1-15-02	1630		X								X			X												
																											4°C

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☒ 7 Days BD ☐ 14 Days ☐ 21 Days ☐ Other ______

QC Requirements (Specify): STD QC

	Date	Time		Date	Time
1. Relinquished By	1-16-02	1408	1. Received By M. Conley	1/16/02	1408
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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SEVERN TRENT SERVICES

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705-4808

Tel: 714 258 8610
Fax: 714 258 0921
www.stl-inc.com

January 23, 2002

STL LOT NUMBER: E2A150281
NELAP Certification Number: 01118CA
PO/CONTRACT: 2279-11462-111.FLD

Sharon Wallin
Camp, Dresser, McKee
18881 Von Karman, Suite 650
Irvine, CA 92612

Dear Ms. Wallin,

This report contains the analytical results for the three samples received under chain of custody by STL Los Angeles on January 15, 2002. These samples are associated with your PTI - Santa Fe Springs project.

All applicable quality control procedures met method-specified acceptance criteria. See Project Receipt Checklist for container temperature and conditions. Temperature reading between 2 to 6 degrees Celsius is considered within acceptable criteria. Any matrix related anomaly is footnoted within the report. The Hexavalent Chromium by 7199 analysis was performed by Del Mar Analytical. See attached report for any related anomaly.

STL Los Angeles certifies that the tests performed at our facility meet all NELAP requirements for parameters for which accreditation is required or available. The case narrative is an integral part of the report. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions, please feel free to call me at (714) 258-8610 extension 309.

Sincerely,

Diane Suzuki
Project Manager

CC: Project File

STL LOS ANGELES
PROJECT RECEIPT CHECKLIST

Date: 1-15-02

Quantims Lot #: E2A150281

Quote #: 29756

Client Name: CDM Philolech

Project:

Received by: TTS

Date/Time Received: 1-15-02 1640

Delivered by : ☐Client ☐Airborne ☐Fed Ex ☐DHL ☐In-House Courier ☒Rey B.
☐UPS ☐DES ☐Other ___________

Initial / Date

Custody Seal Status: ☐Intact ☐Broken ☒None .... TTS 1-15-02

Custody Seal #(s): ______________________ ☒No Seal # ....

Sample Container(s): ☒STL-LA ☐Client ☐N/A ....

Temperature(s) (Cooler/blank) in °C: 14.3 Correction factor -0.1°C (Corrected Temp. 14.2°C ..

Thermometer Used : ID: B ☒IR (Infra-red) ☐Digital (Probe) ....

Samples: ☐Intact ☐Broken ☐Other_________............

Anomalies: ☐No ☐Yes (See Clouseau) ....

Labeled by ....

Labeling checked by ....

Turn Around Time: ☐RUSH-24HR ☐RUSH-48HR ☐RUSH-72HR ☐NORMAL ....

Short-Hold Notification: ☐Ph ☐Wet Chem ☐Metals (Filter/Pres) ☐Encore ☐N/A ...

Outside Analysis(es) (Test/Lab/Date Sent Out) :

7199 — Del Mar 1+2 ....

....

....

....

********** LEAVE NO BLANK SPACES ; USE N/A **********

Fraction	1	2										PH
VOAh /*		3										N/A
500 PBn	1	1										
250 PB	1	1										
125 PB	1	1										

h:HCl | na:Sodium Hydoxide | znna:Zinc Acetate/Sodium Hydroxide | s: H2SO4 | n:HNO3 | n/f:HNO3-Field filtered | n/f/l:HNO3-Lab filtered

CGJ:Clear Glass Jar | CGB:Clear Glass Bottle | AGJ:Amber Glass Jar | AGB:Amber Glass Bottle | PB: Poly Bottle | E:Encore Sampler | V:VOA | SL:Sleeve

* Number of VOA's w/ Headspace present

LOGGED BY/DATE: J Swart 1-15-02 REVIEWED BY/DATE: [signature] 1/16/02

PRC Ver. 6 081401 KRF

QANACA01\\W\Forms\Sample Control Forms

STL Los Angeles
Condition Upon Receipt Anomaly Report (CUR)

SEVERN TRENT SERVICES

Client: CDM   Date/Time 1/15/02 16:20
Lot No: E2A150281   Initiated by: [illegible]

Affected samples   Chain of Custody #

Client ID	Lab ID	Analyses Requested

CONDITION/ANOMALY/VARIANCE (CHECK ALL THAT APPLY):

- **COOLERS**
  - ☐ Not Received, No (COC)
  - ☐ Not Received but COC (s) Available
  - ☐ Leaking
  - ☐ Other: ______
- **TEMPERATURE (SPECS 4 ± 2°C)**
  - ☐ Cooler Temp(s) ______
  - ☐ Temperature Blank(s) ______
- **CONTAINERS**
  - ☐ Leaking
  - ☐ Broken
  - ☐ Extra
  - ☐ Without Labels
  - ☐ VOA Vials with Headspace ______ mm
  - ☐ Other: ______
- **CUSTODY SEALS (COOLER(S)/CONTAINER(S)**
  - ☐ None
  - ☐ Not Intact
  - ☐ Other ______
- **CHAIN OF CUSTODY (COC)**
  - ☐ Not relinquished by Client; No date/time relinquished
  - ☐ Incomplete information provided
  - ☐ Other ______
- **CONTAINERS LABELS**
  - ☐ Not the same ID/info as in COC
  - ☐ Incomplete Information
    - ☐ Preservative
    - ☐ Collection ______ Time ______ Date
  - ☐ Markings/Info illegible
  - ☐ Torn
  - ☐ Other ______
- **SAMPLES**
  - ☐ Samples NOT RECEIVED but listed on COC
  - ☐ Samples received but NOT LISTED on COC
  - ☐ Logged based on Label Information
  - ☐ Logged based on info from other samples on COC
  - ☐ Logged according to Work Plan
  - ☐ Logged on HOLD UNTIL FURTHER NOTICE
  - ☐ Other ______
  - ☐ Will be noted on COC—Client to send samples with new COC
  - ☐ Mislabeled as to tests, preservatives, etc.
  - ☐ Holding time expired
  - ☐ Improper container used
  - ☐ Not preserved/Improper preservative used
  - ☐ Improper pH ______ Lab to preserve sample and document
  - ☐ Insufficient quantities for analysis

Comments Trip blank received, Not on the COC
ANALYZE 8260

Corrective Action Implemented:
☑ Client Informed: verbally on 1/16 By: [illegible] In writing on ______ By: ______
☑ Sample(s) processed "as is." ______
☐ Sample(s) on hold until: ______ If released, notify: ______

Sample Control Supervisor Review: ______ Date: ______
Project Management Review: [illegible] Date: 01/16/02

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SEVERN TRENT SERVICES

Analytical Report

EXECUTIVE SUMMARY - Detection Highlights

E2A150281

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
PTI-EB01-052 01/15/02 14:00 001				
pH	7.1	0.10	No Units	SW846 9040B
PTI-MW1D-052 01/15/02 14:05 002				
Benzene	1.6	1.0	ug/L	SW846 8260B
Tetrachloroethene	2.5	1.0	ug/L	SW846 8260B
Trichloroethene	1.8	1.0	ug/L	SW846 8260B
pH	7.5	0.10	No Units	SW846 9040B

METHODS SUMMARY

E2A150281

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040B	SW846 9040B
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3005A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

E2A150281

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ERN90	001	PTI-EB01-052	01/15/02	14:00
ERPAF	002	PTI-MW1D-052	01/15/02	14:05

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW1D-052

GC/MS Volatiles

Lot-Sample #...:	E2A150281-002	**Work Order #...:**	ERPAF1AA	**Matrix.........:**	WATER
Date Sampled...:	01/15/02 14:05	**Date Received..:**	01/15/02 16:40	**MS Run #.......:**	2016223
Prep Date......:	01/15/02	**Analysis Date..:**	01/15/02		
Prep Batch #...:	2016440	**Analysis Time..:**	23:26		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	**1.6**	**1.0**	**ug/L**	**0.30**
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	**2.5**	**1.0**	**ug/L**	**0.30**
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**1.8**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	100	(75 - 130)
1,2-Dichloroethane-d4	109	(65 - 135)
Toluene-d8	96	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB01-052

General Chemistry

Lot-Sample #...: E2A150281-001 **Work Order #...:** ERN90 **Matrix.........:** WATER
Date Sampled...: 01/15/02 14:00 **Date Received..:** 01/15/02 16:40

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.1	0.10	No Units	SW846 9040B	01/16/02	2016234
	Analysis Time..: 09:07			MS Run #.......: 2016087	MDL............:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW1D-052

General Chemistry

Lot-Sample #...: E2A150281-002 **Work Order #...:** ERPAF **Matrix.........:** WATER
Date Sampled...: 01/15/02 14:05 **Date Received..:** 01/15/02 16:40

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.5	0.10	No Units	SW846 9040B	01/16/02	2016234
	Analysis Time..: 09:10			MS Run #.......: 2016087	MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB01-052

TOTAL Metals

Lot-Sample #...: E2A150281-001 **Matrix.......:** WATER
Date Sampled...: 01/15/02 14:00 **Date Received..:** 01/15/02 16:40

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017290						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERN901AA
		Analysis Time..: 12:07		MS Run #.......: 2017119	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERN901AC
		Analysis Time..: 12:07		MS Run #.......: 2017119	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERN901AD
		Analysis Time..: 12:07		MS Run #.......: 2017119	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW1D-052

TOTAL Metals

Lot-Sample #...: E2A150281-002 **Matrix.......:** WATER
Date Sampled...: 01/15/02 14:05 **Date Received..:** 01/15/02 16:40

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017290						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERPAF1AC
		Analysis Time..: 12:52		MS Run #.......: 2017119	MDL............: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERPAF1AD
		Analysis Time..: 12:52		MS Run #.......: 2017119	MDL............: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERPAF1AE
		Analysis Time..: 12:52		MS Run #.......: 2017119	MDL............: 0.0040	

SEVERN TRENT SERVICES

QA/QC

QC DATA ASSOCIATION SUMMARY

E2A150281

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 9040B		2016234	2016087
	WATER	SW846 6010B		2017290	2017119
002	WATER	SW846 9040B		2016234	2016087
	WATER	SW846 8260B		2016440	2016223
	WATER	SW846 6010B		2017290	2017119

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E2A150281 **Work Order #...:** ERRGC1AA **Matrix.........:** WATER
MB Lot-Sample #: E2A160000-440
Prep Date.......: 01/15/02 **Analysis Time..:** 22:27
Analysis Date..: 01/15/02 **Prep Batch #...:** 2016440

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	99	(75 - 130)
1,2-Dichloroethane-d4	103	(65 - 135)
Toluene-d8	96	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: E2A150281 **Matrix.........:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: E2A170000-290		**Prep Batch #...:** 2017290				
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERTRH1AA
		Analysis Time..: 11:45				
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERTRH1AC
		Analysis Time..: 11:45				
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERTRH1AD
		Analysis Time..: 11:45				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A150281 **Work Order #...:** ERRGC1AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A160000-440
Prep Date......: 01/15/02 **Analysis Date..:** 01/15/02
Prep Batch #...: 2016440 **Analysis Time..:** 21:27

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**9.77**	**ug/L**	**98**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.1**	**ug/L**	**101**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**9.13**	**ug/L**	**91**	**SW846 8260B**
Toluene	**10.0**	**9.86**	**ug/L**	**99**	**SW846 8260B**
Trichloroethene	**10.0**	**10.6**	**ug/L**	**106**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	99	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
Toluene-d8	95	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E2A150281 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH			Work Order #: ERP9F1AA	LCS Lot-Sample#: E2A160000-234			
	9.18	9.20	No Units	100	SW846 9040B	01/16/02	2016234
			Analysis Time..: 09:04				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E2A150281 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A170000-290 **Prep Batch #...:** 2017290							
Cadmium	0.0500	0.0489	mg/L	98	SW846 6010B	01/17-01/18/02	ERTRH1AE
		Analysis Time..: 11:51					
Chromium	0.200	0.196	mg/L	98	SW846 6010B	01/17-01/18/02	ERTRH1AF
		Analysis Time..: 11:51					
Copper	0.250	0.244	mg/L	97	SW846 6010B	01/17-01/18/02	ERTRH1AG
		Analysis Time..: 11:51					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A150281 **Work Order #...:** ERRGC1AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A160000-440
Prep Date......: 01/15/02 **Analysis Date..:** 01/15/02
Prep Batch #...: 2016440 **Analysis Time..:** 21:27

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**98**	**(75 - 120)**	**SW846 8260B**
Chlorobenzene	**101**	**(75 - 120)**	**SW846 8260B**
1,1-Dichloroethene	**91**	**(70 - 140)**	**SW846 8260B**
Toluene	**99**	**(75 - 125)**	**SW846 8260B**
Trichloroethene	**106**	**(70 - 130)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	99	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
Toluene-d8	95	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A150281 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH		Work Order #: ERP9F1AA	LCS Lot-Sample#: E2A160000-234		
	100	(90 - 110)	SW846 9040B	01/16/02	2016234
		Analysis Time..: 09:04			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: E2A150281 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A170000-290 **Prep Batch #...:** 2017290					
Cadmium	98	(80 - 120)	SW846 6010B	01/17-01/18/02	ERTRH1AE
		Analysis Time..: 11:51			
Chromium	98	(85 - 120)	SW846 6010B	01/17-01/18/02	ERTRH1AF
		Analysis Time..: 11:51			
Copper	97	(80 - 120)	SW846 6010B	01/17-01/18/02	ERTRH1AG
		Analysis Time..: 11:51			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E2A150281 **Matrix.........:** WATER
Date Sampled...: 01/15/02 14:00 **Date Received..:** 01/15/02 16:40

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A150281-001 **Prep Batch #...:** 2017290									
Cadmium									
	ND	0.0500	0.0494	mg/L	99		SW846 6010B	01/17-01/18/02	ERN901AG
	ND	0.0500	0.0496	mg/L	99	0.42	SW846 6010B	01/17-01/18/02	ERN901AH
			Analysis Time..: 12:23						
			MS Run #.......: 2017119						
Chromium									
	ND	0.200	0.198	mg/L	99		SW846 6010B	01/17-01/18/02	ERN901AJ
	ND	0.200	0.200	mg/L	100	1.5	SW846 6010B	01/17-01/18/02	ERN901AK
			Analysis Time..: 12:23						
			MS Run #.......: 2017119						
Copper									
	ND	0.250	0.250	mg/L	98		SW846 6010B	01/17-01/18/02	ERN901AL
	ND	0.250	0.250	mg/L	98	0.08	SW846 6010B	01/17-01/18/02	ERN901AM
			Analysis Time..: 12:23						
			MS Run #.......: 2017119						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A150281 **Work Order #...:** ERPAF1AJ-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A150281-002 ERPAF1AK-MSD
Date Sampled...: 01/15/02 14:05 **Date Received..:** 01/15/02 16:40 **MS Run #.......:** 2016223
Prep Date......: 01/16/02 **Analysis Date..:** 01/16/02
Prep Batch #...: 2016440 **Analysis Time..:** 07:22

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**1.6**	**10.0**	**11.3**	**ug/L**	**98**		**SW846 8260B**
	1.6	**10.0**	**11.9**	**ug/L**	**103**	**4.6**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	ND	**10.0**	**10.2**	**ug/L**	**102**	**0.19**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**9.91**	**ug/L**	**99**		**SW846 8260B**
	ND	**10.0**	**9.76**	**ug/L**	**98**	**1.5**	**SW846 8260B**
Toluene	**ND**	**10.0**	**10.2**	**ug/L**	**102**		**SW846 8260B**
	ND	**10.0**	**10.3**	**ug/L**	**103**	**0.68**	**SW846 8260B**
Trichloroethene	**1.8**	**10.0**	**12.6**	**ug/L**	**108**		**SW846 8260B**
	1.8	**10.0**	**12.8**	**ug/L**	**110**	**2.0**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	100	(75 - 130)
	94	(75 - 130)
1,2-Dichloroethane-d4	105	(65 - 135)
	104	(65 - 135)
Toluene-d8	95	(80 - 130)
	88	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: E2A150281 **Matrix.........:** WATER
Date Sampled...: 01/15/02 14:00 **Date Received..:** 01/15/02 16:40

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A150281-001 **Prep Batch #...:** 2017290							
Cadmium	99	(80 - 120)			SW846 6010B	01/17-01/18/02	ERN901AG
	99	(80 - 120)	0.42	(0-20)	SW846 6010B	01/17-01/18/02	ERN901AH
		Analysis Time..: 12:23					
		MS Run #.......: 2017119					
Chromium	99	(85 - 120)			SW846 6010B	01/17-01/18/02	ERN901AJ
	100	(85 - 120)	1.5	(0-20)	SW846 6010B	01/17-01/18/02	ERN901AK
		Analysis Time..: 12:23					
		MS Run #.......: 2017119					
Copper	98	(80 - 120)			SW846 6010B	01/17-01/18/02	ERN901AL
	98	(80 - 120)	0.08	(0-20)	SW846 6010B	01/17-01/18/02	ERN901AM
		Analysis Time..: 12:23					
		MS Run #.......: 2017119					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A150281 **Work Order #...:** ERPAF1AJ-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A150281-002 ERPAF1AK-MSD
Date Sampled...: 01/15/02 14:05 **Date Received..:** 01/15/02 16:40 **MS Run #.......:** 2016223
Prep Date......: 01/16/02 **Analysis Date..:** 01/16/02
Prep Batch #...: 2016440 **Analysis Time..:** 07:22

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**98**	**(75 - 120)**			**SW846 8260B**
	103	**(75 - 120)**	**4.6**	**(0-25)**	**SW846 8260B**
Chlorobenzene	**102**	**(75 - 120)**			**SW846 8260B**
	102	**(75 - 120)**	**0.19**	**(0-25)**	**SW846 8260B**
1,1-Dichloroethene	**99**	**(70 - 140)**			**SW846 8260B**
	98	**(70 - 140)**	**1.5**	**(0-25)**	**SW846 8260B**
Toluene	**102**	**(75 - 125)**			**SW846 8260B**
	103	**(75 - 125)**	**0.68**	**(0-25)**	**SW846 8260B**
Trichloroethene	**108**	**(70 - 130)**			**SW846 8260B**
	110	**(70 - 130)**	**2.0**	**(0-25)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	100	(75 - 130)
	94	(75 - 130)
1,2-Dichloroethane-d4	105	(65 - 135)
	104	(65 - 135)
Toluene-d8	95	(80 - 130)
	88	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A150281 **Work Order #...:** ERPAF-SMP ERPAF-DUP **Matrix.......:** WATER

Date Sampled...: 01/15/02 14:05 **Date Received..:** 01/15/02 16:40

% Moisture.....: **Dilution Factor:** **Initial Wgt/Vol:**

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH						SD Lot-Sample #: E2A150281-002		
	7.5	7.5	No Units	0.20	(0-0.0)	SW846 9040B	01/16/02	2016234

Analysis Time..: 09:10 MS Run Number..: 2016087

SEVERN
TRENT
SERVICES

Subcontract Reports

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
7277 Hayvenhurst, Suite B-12, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705

Attention: Diane Suzuki
Project: E2A150281

Sampled: 01/15/02
Received: 01/15/02
Reported: 01/22/02

This laboratory report is confidential and is intended for the sole use of Del Mar Analytical and its client. This entire report was reviewed and approved for release.

CA ELAP Certificate #1197
AZ DHS License #AZ0428

Del Mar Analytical, Irvine
Pat Abe
Project Manager

000030

Del Mar Analytical

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A150281

Report Number: ILA0479

Sampled: 01/15/02
Received: 01/15/02

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l				
Sample ID: ILA0479-01 (PTI-EB01-052 - Water)								
Chromium VI	EPA 7199	I2A1532	0.0020	ND	1	1/15/2002	1/15/2002	
Sample ID: ILA0479-02 (PTI-MW1D-052 - Water)								
Chromium VI	EPA 7199	I2A1532	0.0020	ND	1	1/15/2002	1/15/2002	

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A150281

Report Number: ILA0479

Sampled: 01/15/02
Received: 01/15/02

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I2A1532 Extracted: 01/15/02										
Blank Analyzed: 01/15/02 (I2A1532-BLK1)										
Chromium VI	ND	0.0020	mg/l							
LCS Analyzed: 01/15/02 (I2A1532-BS1)										
Chromium VI	0.0492	0.0020	mg/l	0.0500		98	90-110			
Matrix Spike Analyzed: 01/15/02 (I2A1532-MS1)					**Source: ILA0479-01**					
Chromium VI	0.0500	0.0020	mg/l	0.0500	ND	100	70-130			
Matrix Spike Dup Analyzed: 01/15/02 (I2A1532-MSD1)					**Source: ILA0479-01**					
Chromium VI	0.0460	0.0020	mg/l	0.0500	ND	92	70-130	8	15	

Del Mar Analytical, Irvine
Pat Abe
Project Manager

000032

Del Mar Analytical

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A150281

Report Number: ILA0479

Sampled: 01/15/02
Received: 01/15/02

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

NR Not reported.

RPD Relative Percent Difference

el Mar Analytical, Irvine
Pat Abe
Project Manager

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Chain of Custody Record

ILA0479

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client	Project Manager	Date	Chain of Custody Number
STL Los Angeles	Diane Suzuki	1-15-02	050235

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
1721 S Grand Ave	714-258-8610 x309	E2A150281	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
Santa Ana	CA	92705		

Project Name and Location (State):

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed) — 7129 Arbor; 1/22/02 ?? DS

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	7129 Arbor
PTI-EB01-052	1-15-02	1400		X							X		X
PTI-MW1D-052	1-15-02	1405		X							X		X

000034

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Normal

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By [signature]	1/15/02	1800	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By [signature]	1/15/02	18:00

Comments: intact 3°C

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

SEVERN TRENT SERVICES

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705-4808

Tel: 714 258 8610
Fax: 714 258 0921
www.stl-inc.com

January 24, 2002

STL LOT NUMBER: E2A160336
NELAP Certification Number: 01118CA
PO/CONTRACT: 2279-11462-111.FLD

Sharon Wallin
Camp, Dresser, McKee
18881 Von Karman, Suite 650
Irvine, CA 92612

Dear Ms. Wallin,

This report contains the analytical results for the 10 samples received under chain of custody by STL Los Angeles on January 16, 2002. These samples are associated with your PTI - Santa Fe Springs project.

All applicable quality control procedures met method-specified acceptance criteria. See Project Receipt Checklist for container temperature and conditions. Temperature reading between 2 to 6 degrees Celsius is considered within acceptable criteria. Any matrix related anomaly is footnoted within the report. The Hexavalent Chromium by 7199 analysis was performed by Del Mar Analytical. See attached report for any related anomaly.

STL Los Angeles certifies that the tests performed at our facility meet all NELAP requirements for parameters for which accreditation is required or available. The case narrative is an integral part of the report. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions, please feel free to call me at (714) 258-8610 extension 309.

Sincerely,

Diane Suzuki
Project Manager

CC: Project File

STL LOS ANGELES
PROJECT RECEIPT CHECKLIST

Date: 01/16/02

Quantims Lot #: E2A160336

Quote #: 29756

Client Name: CDM

Project: Phibrotech

Received by: Pacock

Date/Time Received: 1/16/02 17:00

Delivered by: ☐ Client ☐ Airborne ☐ Fed Ex ☐ DHL ☒ In-House Courier ☐ Rey B. ☐ UPS ☐ DES ☐ Other ________

Initial / Date

Custody Seal Status: ☐ Intact ☐ Broken ☒ None .... AR 1/16/02

Custody Seal #(s): ________ ☒ No Seal # ....

Sample Container(s): ☒ STL-LA ☐ Client ☐ N/A ....

Temperature(s) (Cooler/blank) in °C: 5.2 Correction factor -0.1°C (Corrected Temp.) 5.1 ...

Thermometer Used : ID: B ☒ IR (Infra-red) ☐ Digital (Probe) ....

Samples: ☒ Intact ☐ Broken ☐ Other ________ ....

Anomalies: ☒ No ☒ Yes (See Clouseau) ....

Labeled by ... AR ....

Labeling checked by ....

Turn Around Time: ☐ RUSH-24HR ☐ RUSH-48HR ☐ RUSH-72HR ☒ NORMAL ....

Short-Hold Notification: ☒ Ph ☒ Wet Chem ☐ Metals (Filter/Pres) ☐ Encore ☐ N/A ...

Outside Analysis(es) (Test/Lab/Date Sent Out) :

– 7197 to Del Mar ....

********** LEAVE NO BLANK SPACES ; USE N/A **********

Fraction	1-79										PH
VOAh /*	3										N/A
250 PB	1										—
250 PB na	1										>12
500 ml PB n	1										<2

h:HCl na:Sodium Hydoxide znna:Zinc Acetate/Sodium Hydroxide s: H2SO4 n:HNO3 n/f:HNO3-Field filtered n/f/l:HNO3-Lab filtered

CGJ:Clear Glass Jar CGB:Clear Glass Bottle AGJ:Amber Glass Jar AGB:Amber Glass Bottle PB: Poly Bottle E:Encore Sampler V:VOA SL:Sleeve

* Number of VOA's w/ Headspace present

LOGGED BY/DATE: Pacock 1/16/02 REVIEWED BY/DATE: [signature] 1/16/02

PRC Ver. 6 081401 KRF QANACA01\N:\Precis\Sample Control Forms

Chain of Custody Record

SEVERN TRENT SERVICES Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client: STL LA	Project Manager: Diane Suzuki	Date: 1/16/02	Chain of Custody Number: 050216
Address: 1721 S Grand Ave	Telephone Number (Area Code)/Fax Number: (714) 258 8610 GA 309	Lab Number: E2A160336	Page 1 of 1
City: Santa Ana State: CA Zip Code: 92705	Site Contact: Lab Contact:		
Project Name and Location (State):	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 7196 (Cr VI)	Special Instructions/ Conditions of Receipt
PT1-MW3-052	1/16/02	08:25		X							/		X	
PT1-MW15D-052		09:45												
PT1-MW15S-052		10:45												
PT1-MW6D-052		12:50												
PT1-MW6B-052		13:55												
PT1-MW14S		14:50												
PT1-MW4A-052		15:55												
PT1-EB02-052		15:05												
PT1-D107-052		15:40												

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Normal TAT

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	1/16/02	17:10	1. Received By: [signature]	1/16/02	1710
2. Relinquished By: [signature]	1/16/02	1735	2. Received By:		
3. Relinquished By:			3. Received By: [signature]	1/16/02	1735

Comments: Intact 3°

000006

SEVERN TRENT SERVICES

Analytical Report

EXECUTIVE SUMMARY - Detection Highlights

E2A160336

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
PTI-MW3-052 01/16/02 08:25 001				
Carbon tetrachloride	33	2.5	ug/L	SW846 8260B
Chloroform	30	2.5	ug/L	SW846 8260B
1,1-Dichloroethane	30	2.5	ug/L	SW846 8260B
1,1-Dichloroethene	28	2.5	ug/L	SW846 8260B
Tetrachloroethene	5.6	2.5	ug/L	SW846 8260B
Trichloroethene	220	2.5	ug/L	SW846 8260B
pH	7.2	0.10	No Units	SW846 9040B
PTI-MW15D-052 01/16/02 09:45 002				
Chromium - DISSOLVED	0.010	0.010	mg/L	SW846 6010B
Tetrachloroethene	8.0	1.0	ug/L	SW846 8260B
Trichloroethene	6.4	1.0	ug/L	SW846 8260B
pH	7.6	0.10	No Units	SW846 9040B
PTI-MW15S-052 01/16/02 10:45 003				
Chromium - DISSOLVED	0.011	0.010	mg/L	SW846 6010B
Carbon tetrachloride	1.4	1.0	ug/L	SW846 8260B
Chloroform	2.9	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	8.6	1.0	ug/L	SW846 8260B
Tetrachloroethene	1.1	1.0	ug/L	SW846 8260B
Trichloroethene	2.7	1.0	ug/L	SW846 8260B
pH	7.5	0.10	No Units	SW846 9040B
PTI-MW6D-052 01/16/02 12:50 004				
Tetrachloroethene	1.1	1.0	ug/L	SW846 8260B
Trichloroethene	6.6	1.0	ug/L	SW846 8260B
pH	7.4	0.10	No Units	SW846 9040B
PTI-MW6B-052 01/16/02 13:55 005				
Trichloroethene	5.1	1.0	ug/L	SW846 8260B
pH	7.4	0.10	No Units	SW846 9040B
PTI-MW14S 01/16/02 14:50 006				
Ethylbenzene	2700	50	ug/L	SW846 8260B
Trichloroethene	91	50	ug/L	SW846 8260B
m-Xylene & p-Xylene	1100	50	ug/L	SW846 8260B
pH	7.4	0.10	No Units	SW846 9040B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

E2A160336

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
PTI-MW4A-052 01/16/02 15:55 007				
Tetrachloroethene	1.7	1.0	ug/L	SW846 8260B
Trichloroethene	3.5	1.0	ug/L	SW846 8260B
pH	5.9	0.10	No Units	SW846 9040B
PTI-EB02-052 01/16/02 15:05 008				
pH	7.7	0.10	No Units	SW846 9040B
PTI-DI01-052 01/16/02 15:40 009				
pH	6.1	0.10	No Units	SW846 9040B

METHODS SUMMARY

E2A160336

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040B	SW846 9040B
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3005A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

E2A160336

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ERRLT	001	PTI-MW3-052	01/16/02	08:25
ERRL1	002	PTI-MW15D-052	01/16/02	09:45
ERRL3	003	PTI-MW15S-052	01/16/02	10:45
ERRL4	004	PTI-MW6D-052	01/16/02	12:50
ERRL5	005	PTI-MW6B-052	01/16/02	13:55
ERRL6	006	PTI-MW14S	01/16/02	14:50
ERRL8	007	PTI-MW4A-052	01/16/02	15:55
ERRL9	008	PTI-EB02-052	01/16/02	15:05
ERRME	009	PTI-DI01-052	01/16/02	15:40
ERRNC	010	TRIP BLANK	01/16/02	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW3-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-001	**Work Order #...:**	ERRLT1AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 08:25	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	20:52		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	2.5	ug/L	0.75
Bromodichloromethane	ND	2.5	ug/L	0.75
Bromoform	ND	2.5	ug/L	0.75
Bromomethane	ND	5.0	ug/L	2.5
Carbon tetrachloride	**33**	**2.5**	**ug/L**	**0.75**
Chlorobenzene	ND	2.5	ug/L	0.75
Dibromochloromethane	ND	2.5	ug/L	1.0
Chloroethane	ND	5.0	ug/L	0.75
Chloroform	**30**	**2.5**	**ug/L**	**0.75**
Chloromethane	ND	5.0	ug/L	0.75
1,2-Dichlorobenzene	ND	2.5	ug/L	0.75
1,3-Dichlorobenzene	ND	2.5	ug/L	0.75
1,4-Dichlorobenzene	ND	2.5	ug/L	0.75
1,1-Dichloroethane	**30**	**2.5**	**ug/L**	**0.50**
1,2-Dichloroethane	ND	2.5	ug/L	1.0
1,1-Dichloroethene	**28**	**2.5**	**ug/L**	**0.75**
cis-1,2-Dichloroethene	ND	2.5	ug/L	0.75
trans-1,2-Dichloroethene	ND	2.5	ug/L	0.75
1,2-Dichloropropane	ND	2.5	ug/L	0.75
cis-1,3-Dichloropropene	ND	2.5	ug/L	0.75
trans-1,3-Dichloropropene	ND	2.5	ug/L	1.2
Ethylbenzene	ND	2.5	ug/L	0.50
Methylene chloride	ND	2.5	ug/L	0.75
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L	1.0
Tetrachloroethene	**5.6**	**2.5**	**ug/L**	**0.75**
Toluene	ND	2.5	ug/L	0.75
1,1,1-Trichloroethane	ND	2.5	ug/L	0.50
1,1,2-Trichloroethane	ND	2.5	ug/L	0.75
Trichloroethene	**220**	**2.5**	**ug/L**	**0.75**
Trichlorofluoromethane	ND	5.0	ug/L	0.75
Vinyl chloride	ND	5.0	ug/L	0.75
m-Xylene & p-Xylene	ND	2.5	ug/L	1.2
o-Xylene	ND	2.5	ug/L	0.50

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	92	(75 - 130)
1,2-Dichloroethane-d4	98	(65 - 135)
Toluene-d8	90	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW15D-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-002	**Work Order #...:**	ERRL11AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 09:45	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	21:21		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	**8.0**	**1.0**	**ug/L**	**0.30**
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**6.4**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	89	(75 - 130)
1,2-Dichloroethane-d4	96	(65 - 135)
Toluene-d8	88	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW15S-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-003	**Work Order #...:**	ERRL31AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 10:45	**Date Received..:**	01/16/02 17:00	**MS Run #........:**	2017236
Prep Date.......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	21:51		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	**1.4**	**1.0**	**ug/L**	**0.30**
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	**2.9**	**1.0**	**ug/L**	**0.30**
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	**8.6**	**1.0**	**ug/L**	**0.40**
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	**1.1**	**1.0**	**ug/L**	**0.30**
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**2.7**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 130)
1,2-Dichloroethane-d4	100	(65 - 135)
Toluene-d8	89	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW6D-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-004	**Work Order #...:**	ERRL41AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 12:50	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	22:21		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	**1.1**	**1.0**	**ug/L**	**0.30**
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**6.6**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 130)
1,2-Dichloroethane-d4	98	(65 - 135)
Toluene-d8	91	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW6B-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-005	**Work Order #...:**	ERRL51AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 13:55	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	22:50		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	ND	1.0	ug/L	0.30
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**5.1**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	91	(75 - 130)
1,2-Dichloroethane-d4	95	(65 - 135)
Toluene-d8	87	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW14S

GC/MS Volatiles

Lot-Sample #...:	E2A160336-006	**Work Order #...:**	ERRL61AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 14:50	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	23:20		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	50	ug/L	15
Bromodichloromethane	ND	50	ug/L	15
Bromoform	ND	50	ug/L	15
Bromomethane	ND	100	ug/L	50
Carbon tetrachloride	ND	50	ug/L	15
Chlorobenzene	ND	50	ug/L	15
Dibromochloromethane	ND	50	ug/L	20
Chloroethane	ND	100	ug/L	15
Chloroform	ND	50	ug/L	15
Chloromethane	ND	100	ug/L	15
1,2-Dichlorobenzene	ND	50	ug/L	15
1,3-Dichlorobenzene	ND	50	ug/L	15
1,4-Dichlorobenzene	ND	50	ug/L	15
1,1-Dichloroethane	ND	50	ug/L	10
1,2-Dichloroethane	ND	50	ug/L	20
1,1-Dichloroethene	ND	50	ug/L	15
cis-1,2-Dichloroethene	ND	50	ug/L	15
trans-1,2-Dichloroethene	ND	50	ug/L	15
1,2-Dichloropropane	ND	50	ug/L	15
cis-1,3-Dichloropropene	ND	50	ug/L	15
trans-1,3-Dichloropropene	ND	50	ug/L	25
Ethylbenzene	**2700**	**50**	**ug/L**	**10**
Methylene chloride	ND	50	ug/L	15
1,1,2,2-Tetrachloroethane	ND	50	ug/L	20
Tetrachloroethene	ND	50	ug/L	15
Toluene	ND	50	ug/L	15
1,1,1-Trichloroethane	ND	50	ug/L	10
1,1,2-Trichloroethane	ND	50	ug/L	15
Trichloroethene	**91**	**50**	**ug/L**	**15**
Trichlorofluoromethane	ND	100	ug/L	15
Vinyl chloride	ND	100	ug/L	15
m-Xylene & p-Xylene	**1100**	**50**	**ug/L**	**25**
o-Xylene	ND	50	ug/L	10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	92	(75 - 130)
1,2-Dichloroethane-d4	97	(65 - 135)
Toluene-d8	89	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW4A-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-007	**Work Order #...:**	ERRL81AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 15:55	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	23:50		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	**1.7**	**1.0**	**ug/L**	**0.30**
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**3.5**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	92	(75 - 130)
1,2-Dichloroethane-d4	101	(65 - 135)
Toluene-d8	88	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB02-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-008	**Work Order #...:**	ERRL91AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 15:05	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	19:52		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	ND	1.0	ug/L	0.30
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	ND	1.0	ug/L	0.30
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	91	(75 - 130)
1,2-Dichloroethane-d4	103	(65 - 135)
Toluene-d8	94	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-DI01-052

GC/MS Volatiles

Lot-Sample #...:	E2A160336-009	**Work Order #...:**	ERRME1AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02 15:40	**Date Received..:**	01/16/02 17:00	**MS Run #.......:**	2017236
Prep Date......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	20:22		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	ND	1.0	ug/L	0.30
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	ND	1.0	ug/L	0.30
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	92	(75 - 130)
1,2-Dichloroethane-d4	99	(65 - 135)
Toluene-d8	90	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...:	E2A160336-010	**Work Order #...:**	ERRNC1AA	**Matrix.........:**	WATER
Date Sampled...:	01/16/02	**Date Received..:**	01/16/02 17:00	**MS Run #........:**	2017236
Prep Date.......:	01/16/02	**Analysis Date..:**	01/16/02		
Prep Batch #...:	2017453	**Analysis Time..:**	18:23		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	ND	1.0	ug/L	0.30
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	ND	1.0	ug/L	0.30
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 130)
1,2-Dichloroethane-d4	86	(65 - 135)
Toluene-d8	90	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW3-052

General Chemistry

Lot-Sample #...: E2A160336-001 **Work Order #...:** ERRLT **Matrix.........:** WATER
Date Sampled...: 01/16/02 08:25 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.2	0.10	No Units	SW846 9040B	01/16/02	2016486

Analysis Time..: 18:01 MS Run #.......: 2016253 MDL...........:

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW15D-052

General Chemistry

Lot-Sample #...: E2A160336-002 **Work Order #...:** ERRL1 **Matrix.........:** WATER
Date Sampled...: 01/16/02 09:45 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.6	0.10	No Units	SW846 9040B	01/16/02	2016486

Analysis Time..: 18:07 MS Run #.......: 2016253 MDL............:

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW15S-052

General Chemistry

Lot-Sample #...: E2A160336-003 **Work Order #...:** ERRL3 **Matrix.........:** WATER
Date Sampled...: 01/16/02 10:45 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**7.5**	**0.10**	**No Units**	**SW846 9040B**	**01/16/02**	**2016486**
	Analysis Time..: 18:10			MS Run #.......: 2016253	MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW6D-052

General Chemistry

Lot-Sample #...: E2A160336-004 **Work Order #...:** ERRL4 **Matrix.........:** WATER
Date Sampled...: 01/16/02 12:50 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**7.4**	**0.10**	**No Units**	**SW846 9040B**	**01/16/02**	**2016486**
	Analysis Time..: 18:13			MS Run #.......: 2016253	MDL............:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW6B-052

General Chemistry

Lot-Sample #...: E2A160336-005 **Work Order #...:** ERRL5 **Matrix.........:** WATER
Date Sampled...: 01/16/02 13:55 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.4	0.10	No Units	SW846 9040B	01/16/02	2016486

Analysis Time..: 18:16 MS Run #.......: 2016253 MDL...........:

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW14S

General Chemistry

Lot-Sample #...: E2A160336-006 **Work Order #...:** ERRL6 **Matrix.........:** WATER
Date Sampled...: 01/16/02 14:50 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.4	0.10	No Units	SW846 9040B	01/16/02	2016486

Analysis Time..: 18:19 MS Run #.......: 2016253 MDL............:

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW4A-052

General Chemistry

Lot-Sample #...: E2A160336-007 **Work Order #...:** ERRL8 **Matrix.........:** WATER
Date Sampled...: 01/16/02 15:55 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**5.9**	**0.10**	**No Units**	**SW846 9040B**	**01/16/02**	**2016486**

Analysis Time..: 18:22 MS Run #.......: 2016253 MDL............:

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB02-052

General Chemistry

Lot-Sample #...: E2A160336-008 **Work Order #...:** ERRL9 **Matrix.........:** WATER
Date Sampled...: 01/16/02 15:05 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.7	0.10	No Units	SW846 9040B	01/16/02	2016486

Analysis Time..: 18:25 MS Run #.......: 2016253 MDL...........:

PHIBRO-TECH, INC.

Client Sample ID: PTI-DI01-052

General Chemistry

Lot-Sample #...: E2A160336-009 **Work Order #...:** ERRME **Matrix.........:** WATER
Date Sampled...: 01/16/02 15:40 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**6.1**	**0.10**	**No Units**	**SW846 9040B**	**01/16/02**	**2016486**
	Analysis Time..: 18:31			MS Run #.......: 2016253	MDL............:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW3-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-001 **Matrix.......:** WATER
Date Sampled...: 01/16/02 08:25 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRLT1AD
		Analysis Time..: 14:56		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERRLT1AE
		Analysis Time..: 14:56		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRLT1AF
		Analysis Time..: 14:56		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW15D-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-002 **Matrix.......:** WATER
Date Sampled...: 01/16/02 09:45 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRL11AD
		Analysis Time..: 15:40		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	**0.010**	**0.010**	**mg/L**	**SW846 6010B**	**01/17-01/18/02**	**ERRL11AE**
		Analysis Time..: 15:40		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRL11AF
		Analysis Time..: 15:40		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW15S-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-003 **Matrix.......:** WATER
Date Sampled...: 01/16/02 10:45 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRL31AD
		Analysis Time..: 15:48		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	**0.011**	**0.010**	**mg/L**	**SW846 6010B**	**01/17-01/18/02**	**ERRL31AE**
		Analysis Time..: 15:48		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRL31AF
		Analysis Time..: 15:48		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW6D-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-004 **Matrix.......:** WATER
Date Sampled...: 01/16/02 12:50 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRL41AD
		Analysis Time..: 15:56		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERRL41AE
		Analysis Time..: 15:56		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRL41AF
		Analysis Time..: 15:56		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW6B-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-005 **Matrix.......:** WATER
Date Sampled...: 01/16/02 13:55 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRL51AD
		Analysis Time..: 16:04		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERRL51AE
		Analysis Time..: 16:04		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRL51AF
		Analysis Time..: 16:04		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW14S

DISSOLVED Metals

Lot-Sample #...: E2A160336-006 **Matrix.......:** WATER
Date Sampled...: 01/16/02 14:50 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRL61AD
		Analysis Time..: 16:12		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERRL61AE
		Analysis Time..: 16:12		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRL61AF
		Analysis Time..: 16:12		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW4A-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-007 **Matrix.......:** WATER
Date Sampled...: 01/16/02 15:55 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRL81AD
		Analysis Time..: 16:20		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERRL81AE
		Analysis Time..: 16:20		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRL81AF
		Analysis Time..: 16:20		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB02-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-008 **Matrix.......:** WATER
Date Sampled...: 01/16/02 15:05 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRL91AD
		Analysis Time..: 16:28		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERRL91AE
		Analysis Time..: 16:28		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRL91AF
		Analysis Time..: 16:28		MS Run #.......: 2017112	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-DI01-052

DISSOLVED Metals

Lot-Sample #...: E2A160336-009 **Matrix.......:** WATER
Date Sampled...: 01/16/02 15:40 **Date Received..:** 01/16/02 17:00

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERRME1AD
		Analysis Time..: 16:33		MS Run #.......: 2017112	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERRME1AE
		Analysis Time..: 16:33		MS Run #.......: 2017112	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERRME1AF
		Analysis Time..: 16:33		MS Run #.......: 2017112	MDL...........: 0.0040	

SEVERN TRENT SERVICES

QA/QC

QC DATA ASSOCIATION SUMMARY

E2A160336

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
002	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
003	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
004	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
005	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
006	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
007	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
008	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
009	WATER	SW846 9040B		2016486	2016253
	WATER	SW846 8260B		2017453	2017236
	WATER	SW846 6010B		2017279	2017112
010	WATER	SW846 8260B		2017453	2017236

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E2A160336 **Work Order #...:** ERV0L1AA **Matrix.........:** WATER
MB Lot-Sample #: E2A170000-453
Prep Date......: 01/16/02 **Analysis Time..:** 17:53
Analysis Date..: 01/16/02 **Prep Batch #...:** 2017453

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	91	(75 - 130)
1,2-Dichloroethane-d4	92	(65 - 135)
Toluene-d8	90	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

DISSOLVED Metals

Client Lot #...: E2A160336 **Matrix.........:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: E2A170000-279 **Prep Batch #...:** 2017279						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/17-01/18/02	ERTQF1AA
		Analysis Time..: 14:42				
Chromium	ND	0.010	mg/L	SW846 6010B	01/17-01/18/02	ERTQF1AC
		Analysis Time..: 14:42				
Copper	ND	0.025	mg/L	SW846 6010B	01/17-01/18/02	ERTQF1AD
		Analysis Time..: 14:42				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A160336 **Work Order #...:** ERV0L1AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A170000-453
Prep Date......: 01/16/02 **Analysis Date..:** 01/16/02
Prep Batch #...: 2017453 **Analysis Time..:** 16:54

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**10.1**	**ug/L**	**101**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**10.4**	**ug/L**	**104**	**SW846 8260B**
Toluene	**10.0**	**10.2**	**ug/L**	**102**	**SW846 8260B**
Trichloroethene	**10.0**	**10.6**	**ug/L**	**106**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 130)
1,2-Dichloroethane-d4	83	(65 - 135)
Toluene-d8	84	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E2A160336 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH			Work Order #: ERRNP1AA	LCS Lot-Sample#: E2A160000-486			
	9.18	9.22	No Units	100	SW846 9040B	01/16/02	2016486
			Analysis Time..: 17:58				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: E2A160336 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A170000-279 **Prep Batch #...:** 2017279							
Cadmium	0.0500	0.0495	mg/L	99	SW846 6010B	01/17-01/18/02	ERTQF1AE
			Analysis Time..: 14:48				
Chromium	0.200	0.206	mg/L	103	SW846 6010B	01/17-01/18/02	ERTQF1AF
			Analysis Time..: 14:48				
Copper	0.250	0.236	mg/L	94	SW846 6010B	01/17-01/18/02	ERTQF1AG
			Analysis Time..: 14:48				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A160336 **Work Order #...:** ERV0L1AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A170000-453
Prep Date......: 01/16/02 **Analysis Date..:** 01/16/02
Prep Batch #...: 2017453 **Analysis Time..:** 16:54

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**101**	**(75 - 120)**	**SW846 8260B**
Chlorobenzene	**102**	**(75 - 120)**	**SW846 8260B**
1,1-Dichloroethene	**104**	**(70 - 140)**	**SW846 8260B**
Toluene	**102**	**(75 - 125)**	**SW846 8260B**
Trichloroethene	**106**	**(70 - 130)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 130)
1,2-Dichloroethane-d4	83	(65 - 135)
Toluene-d8	84	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A160336 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH		Work Order #: ERRNP1AA	LCS Lot-Sample#: E2A160000-486		
	100	(90 - 110)	SW846 9040B	01/16/02	2016486
		Analysis Time..: 17:58			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: E2A160336 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A170000-279 **Prep Batch #...:** 2017279					
Cadmium	99	(80 - 120)	SW846 6010B	01/17-01/18/02	ERTQF1AE
		Analysis Time..: 14:48			
Chromium	103	(85 - 120)	SW846 6010B	01/17-01/18/02	ERTQF1AF
		Analysis Time..: 14:48			
Copper	94	(80 - 120)	SW846 6010B	01/17-01/18/02	ERTQF1AG
		Analysis Time..: 14:48			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: E2A160336 **Matrix.........:** WATER
Date Sampled...: 01/16/02 08:25 **Date Received..:** 01/16/02 17:00

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A160336-001 **Prep Batch #...:** 2017279									
Cadmium									
	ND	0.0500	0.0506	mg/L	101		SW846 6010B	01/17-01/18/02	ERRLT1AJ
	ND	0.0500	0.0501	mg/L	100	0.97	SW846 6010B	01/17-01/18/02	ERRLT1AK
			Analysis Time..: 15:10						
			MS Run #.......: 2017112						
Chromium									
	ND	0.200	0.203	mg/L	102		SW846 6010B	01/17-01/18/02	ERRLT1AL
	ND	0.200	0.202	mg/L	101	0.55	SW846 6010B	01/17-01/18/02	ERRLT1AM
			Analysis Time..: 15:10						
			MS Run #.......: 2017112						
Copper									
	ND	0.250	0.267	mg/L	102		SW846 6010B	01/17-01/18/02	ERRLT1AN
	ND	0.250	0.265	mg/L	101	0.76	SW846 6010B	01/17-01/18/02	ERRLT1AP
			Analysis Time..: 15:10						
			MS Run #.......: 2017112						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A160336 **Work Order #...:** ERRL51AH-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A160336-005 ERRL51AJ-MSD
Date Sampled...: 01/16/02 13:55 **Date Received..:** 01/16/02 17:00 **MS Run #.......:** 2017236
Prep Date......: 01/17/02 **Analysis Date..:** 01/17/02
Prep Batch #...: 2017453 **Analysis Time..:** 02:18

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10.0**	**10.4**	**ug/L**	**104**		**SW846 8260B**
	ND	**10.0**	**10.4**	**ug/L**	**104**	**0.19**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**10.5**	**ug/L**	**105**		**SW846 8260B**
	ND	**10.0**	**11.0**	**ug/L**	**110**	**4.5**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**9.93**	**ug/L**	**99**		**SW846 8260B**
	ND	**10.0**	**9.68**	**ug/L**	**97**	**2.6**	**SW846 8260B**
Toluene	**ND**	**10.0**	**10.3**	**ug/L**	**103**		**SW846 8260B**
	ND	**10.0**	**10.7**	**ug/L**	**107**	**3.8**	**SW846 8260B**
Trichloroethene	**5.1**	**10.0**	**16.2**	**ug/L**	**111**		**SW846 8260B**
	5.1	**10.0**	**16.4**	**ug/L**	**113**	**1.2**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 130)
	94	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
	99	(65 - 135)
Toluene-d8	88	(80 - 130)
	92	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: E2A160336 **Matrix.........:** WATER
Date Sampled...: 01/16/02 08:25 **Date Received..:** 01/16/02 17:00

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A160336-001 **Prep Batch #...:** 2017279							
Cadmium	101	(80 - 120)			SW846 6010B	01/17-01/18/02	ERRLT1AJ
	100	(80 - 120)	0.97	(0-20)	SW846 6010B	01/17-01/18/02	ERRLT1AK
		Analysis Time..: 15:10					
		MS Run #.......: 2017112					
Chromium	102	(85 - 120)			SW846 6010B	01/17-01/18/02	ERRLT1AL
	101	(85 - 120)	0.55	(0-20)	SW846 6010B	01/17-01/18/02	ERRLT1AM
		Analysis Time..: 15:10					
		MS Run #.......: 2017112					
Copper	102	(80 - 120)			SW846 6010B	01/17-01/18/02	ERRLT1AN
	101	(80 - 120)	0.76	(0-20)	SW846 6010B	01/17-01/18/02	ERRLT1AP
		Analysis Time..: 15:10					
		MS Run #.......: 2017112					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A160336 **Work Order #...:** ERRL51AH-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A160336-005 ERRL51AJ-MSD
Date Sampled...: 01/16/02 13:55 **Date Received..:** 01/16/02 17:00 **MS Run #.......:** 2017236
Prep Date......: 01/17/02 **Analysis Date..:** 01/17/02
Prep Batch #...: 2017453 **Analysis Time..:** 02:18

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**104**	**(75 - 120)**			**SW846 8260B**
	104	**(75 - 120)**	**0.19**	**(0-25)**	**SW846 8260B**
Chlorobenzene	**105**	**(75 - 120)**			**SW846 8260B**
	110	**(75 - 120)**	**4.5**	**(0-25)**	**SW846 8260B**
1,1-Dichloroethene	**99**	**(70 - 140)**			**SW846 8260B**
	97	**(70 - 140)**	**2.6**	**(0-25)**	**SW846 8260B**
Toluene	**103**	**(75 - 125)**			**SW846 8260B**
	107	**(75 - 125)**	**3.8**	**(0-25)**	**SW846 8260B**
Trichloroethene	**111**	**(70 - 130)**			**SW846 8260B**
	113	**(70 - 130)**	**1.2**	**(0-25)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 130)
	94	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
	99	(65 - 135)
Toluene-d8	88	(80 - 130)
	92	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A160336 **Work Order #...:** ERRLT-SMP ERRLT-DUP **Matrix.......:** WATER

Date Sampled...: 01/16/02 08:25 **Date Received..:** 01/16/02 17:00

% Moisture.....: **Dilution Factor:** **Initial Wgt/Vol:**

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH						SD Lot-Sample #: E2A160336-001		
	7.2	7.2	No Units	0.028	(0-0.0)	SW846 9040B	01/16/02	2016486

Analysis Time..: 18:01 MS Run Number..: 2016253

SEVERN TRENT SERVICES

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LABORATORY REPORT

Prepared For: STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705

Attention: Diane Suzuki
Project: E2A160336

Sampled: 01/16/02
Received: 01/16/02
Reported: 01/25/02

This laboratory report is confidential and is intended for the sole use of Del Mar Analytical and its client. This entire report was reviewed and approved for release.

CA ELAP Certificate #1197
AZ DHS License #AZ0428

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

CASE NARRATIVE

LABORATORY NUMBER	SAMPLE DESCRIPTION	SAMPLE MATRIX	ANALYSES
ILA0529-01	PTI-MW3-052	Water	EPA 7196A EPA 7199
ILA0529-02	PTI-MW15D-052	Water	EPA 7196A EPA 7199
ILA0529-03	PTI-MW15S-052	Water	EPA 7196A EPA 7199
ILA0529-04	PTI-MW6D-052	Water	EPA 7196A EPA 7199
ILA0529-05	PTI-MW6B-052	Water	EPA 7196A EPA 7199
ILA0529-06	PTI-MW14S	Water	EPA 7196A EPA 7199
ILA0529-07	PTI-MW4A-052	Water	EPA 7196A EPA 7199
ILA0529-08	PTI-EB02-052	Water	EPA 7196A EPA 7199
ILA0529-09	PTI-DI01-052	Water	EPA 7196A EPA 7199

SAMPLE RECEIPT: Samples were received intact, at 3°C, and with chain of custody documentation.

HOLDING TIMES: Please see Additional Case Narrative for details.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria except as noted in the report with data qualifiers. Please see Additional Case Narrative for details.

OBSERVATIONS: Please see Additional Case Narrative for details.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

Additional Case Narrative Details:

The initial analysis of all samples for Hexavalent Chromium were performed by EPA Method 7199 as specified on the chain of custody; however, the closing CCV (80%) was outside limits (90-110%). The instrument could not be repaired in time to perform a re-analysis within the method specified holding time of 24 hours, so all samples were re-analyzed for Hexavalent Chromium using EPA Method 7196. Results from both methods were reported per client request, and the results by EPA Method 7199 were flagged.

DEL MAR ANALYTICAL, IRVINE (CA ELAP #1197)

'el Mar Analytical, Irvine
'at Abe
'roject Manager

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l				
Sample ID: ILA0529-01 (PTI-MW3-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	ND	1	1/16/2002	1/16/2002	A-01
Sample ID: ILA0529-02 (PTI-MW15D-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	**0.0081**	1	1/16/2002	1/16/2002	A-01
Sample ID: ILA0529-03 (PTI-MW15S-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	**0.0091**	1	1/16/2002	1/16/2002	A-01
Sample ID: ILA0529-04 (PTI-MW6D-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	ND	1	1/16/2002	1/16/2002	A-01
Sample ID: ILA0529-05 (PTI-MW6B-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	**0.0051**	1	1/16/2002	1/16/2002	A-01
Sample ID: ILA0529-06 (PTI-MW14S - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	ND	1	1/16/2002	1/16/2002	A-01
Sample ID: ILA0529-07 (PTI-MW4A-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	**0.0052**	1	1/16/2002	1/16/2002	A-01
Sample ID: ILA0529-08 (PTI-EB02-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	ND	1	1/16/2002	1/16/2002	A-01

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l				
Sample ID: ILA0529-09 (PTI-DI01-052 - Water)								
Chromium VI	EPA 7199	I2A1638	0.0020	ND	1	1/16/2002	1/16/2002	A-01

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l				
Sample ID: ILA0529-01 (PTI-MW3-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	**0.020**	1	1/17/2002	1/17/2002	
Sample ID: ILA0529-02 (PTI-MW15D-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	ND	1	1/17/2002	1/17/2002	
Sample ID: ILA0529-03 (PTI-MW15S-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	**0.010**	1	1/17/2002	1/17/2002	
Sample ID: ILA0529-04 (PTI-MW6D-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	ND	1	1/17/2002	1/17/2002	
Sample ID: ILA0529-05 (PTI-MW6B-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	ND	1	1/17/2002	1/17/2002	
Sample ID: ILA0529-06 (PTI-MW14S - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	ND	1	1/17/2002	1/17/2002	
Sample ID: ILA0529-07 (PTI-MW4A-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	**0.010**	1	1/17/2002	1/17/2002	
Sample ID: ILA0529-08 (PTI-EB02-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	**0.010**	1	1/17/2002	1/17/2002	

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l				
Sample ID: ILA0529-09 (PTI-DI01-052 - Water)								
Chromium VI	EPA 7196A	I2A1775	0.010	ND	1	1/17/2002	1/17/2002	

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I2A1638 Extracted: 01/16/02										
Blank Analyzed: 01/16/02 (I2A1638-BLK1)										
Chromium VI	ND	0.0020	mg/l							*A-01*
LCS Analyzed: 01/16/02 (I2A1638-BS1)										
Chromium VI	0.0474	0.0020	mg/l	0.0500		95	90-110			*A-01*
Matrix Spike Analyzed: 01/16/02 (I2A1638-MS1)					**Source: ILA0509-01**					
Chromium VI	0.0515	0.0020	mg/l	0.0500	ND	99	70-130			*A-01*
Matrix Spike Dup Analyzed: 01/16/02 (I2A1638-MSD1)					**Source: ILA0509-01**					
Chromium VI	0.0521	0.0020	mg/l	0.0500	ND	100	70-130	1	15	*A-01*

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I2A1775 Extracted: 01/17/02										
Blank Analyzed: 01/17/02 (I2A1775-BLK1)										
Chromium VI	ND	0.010	mg/l							
LCS Analyzed: 01/17/02 (I2A1775-BS1)										
Chromium VI	0.0947	0.010	mg/l	0.100		95	90-110			
Matrix Spike Analyzed: 01/17/02 (I2A1775-MS1)					**Source: ILA0529-01**					
Chromium VI	0.292	0.010	mg/l	0.300	0.020	91	85-115			
Matrix Spike Dup Analyzed: 01/17/02 (I2A1775-MSD1)					**Source: ILA0529-01**					
Chromium VI	0.296	0.010	mg/l	0.300	0.020	92	85-115	1	20	

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7277 Hayvenhurst, Suite B-12, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A160336

Report Number: ILA0529

Sampled: 01/16/02
Received: 01/16/02

DATA QUALIFIERS AND DEFINITIONS

A-01	Reported per client request; see case narrative.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
NR	Not reported.
RPD	Relative Percent Difference

el Mar Analytical, Irvine
Pat Abe
Project Manager

000064

Chain of Custody Record

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client: STL LA	Project Manager: Diane Suzuki	Date: 1/16/02	Chain of Custody Number: 050216
Address: 1721 S Grand Ave	Telephone Number (Area Code)/Fax Number: (714) 2588610 GA309	Lab Number: E2A160336	Page 1 of 1
City: Santa Ana · State: CA · Zip Code: 92705	Site Contact: · Lab Contact:	Analysis (Attach list if more space is needed)	
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil		Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/ NaOH		7199 (Cr VI)	Special Instructions/ Conditions of Receipt
PTI-MW3-052	1/16/02	08:25		X								1			X	
PTI-MW15D-052	↓	09:45		↓								↓			↓	
PTI-MW15S-052	↓	10:45		↓								↓			↓	
PTI-MW6D-052	↓	12:50		↓								↓			↓	
PTI-MW6B-052	↓	13:55		↓								↓			↓	
PTI-MW14S	↓	14:50		↓								↓			↓	
PTI-MW4A-052	↓	15:55		↓								↓			↓	
PTI-EB02-052	↓	15:05		↓								↓			↓	
PTI-D107-052	↓	15:40		↓								↓			↓	

00063

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Normal TAT

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	1/16/02	17:10	1. Received By: [signature]	1/16/02	1710
2. Relinquished By: [signature]	1/16/02	1725	2. Received By		
3. Relinquished By			3. Received By: [signature]	1/16/02	1735

Comments: Intact 3°

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

SEVERN TRENT SERVICES

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705-4808

Tel: 714 258 8610
Fax: 714 258 0921
www.stl-inc.com

January 24, 2002

STL LOT NUMBER: E2A170314
NELAP Certification Number: 01118CA
PO/CONTRACT: 2279-11462-111.FLD

Sharon Wallin
Camp, Dresser, McKee
18881 Von Karman, Suite 650
Irvine, CA 92612

Dear Ms. Wallin,

This report contains the analytical results for the nine samples received under chain of custody by STL Los Angeles on January 17, 2002. These samples are associated with your PTI - Santa Fe Springs project.

All applicable quality control procedures met method-specified acceptance criteria. See Project Receipt Checklist for container temperature and conditions. Temperature reading between 2 to 6 degrees Celsius is considered within acceptable criteria. Any matrix related anomaly is footnoted within the report. The Hexavalent Chromium by 7199 analysis was performed by Del Mar Analytical. See attached report for any related anomaly.

STL Los Angeles certifies that the tests performed at our facility meet all NELAP requirements for parameters for which accreditation is required or available. The case narrative is an integral part of the report. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions, please feel free to call me at (714) 258-8610 extension 309.

Sincerely,

Diane Suzuki
Project Manager

CC: Project File

ACCREDITED IN ACCORDANCE WITH nelac

STL LOS ANGELES
PROJECT RECEIPT CHECKLIST

Date: 1/17/02

Quantims Lot #: ~~EDA~~ I7O 314
Client Name: CDM
Received by: MCT
Quote #:
Project: PIMBROTECH
Date/Time Received: 1/17/02 16:55

Delivered by : ☐Client ☐Airborne ☐Fed Ex ☐DHL ☐In-House Courier ☐Rey B.
☐UPS ☒DES ☐Other ________

Initial / Date

Custody Seal Status: ☐Intact ☐Broken ☒None .... MCT 1/17/02
Custody Seal #(s): ____________ ☐No Seal # ....
Sample Container(s): ☒STL-LA ☐Client ☐N/A ....
Temperature(s) (Cooler/blank) in °C: 4.3C Correction factor -0.1°C (Corrected Temp.) 4.2C ...
Thermometer Used : ID: B ☒IR (Infra-red) ☐Digital (Probe) ....
Samples: ☒Intact ☐Broken ☐Other ________ ....
Anomalies: ☒No ☐Yes (See Clouseau) ....
Labeled by ....
Labeling checked by ....

Turn Around Time: ☐RUSH-24HR ☐RUSH-48HR ☐RUSH-72HR ☒NORMAL ....
Short-Hold Notification: ☐Ph ☐Wet Chem ☐Metals (Filter/Pres) ☐Encore ☒N/A ...
Outside Analysis(es) (Test/Lab/Date Sent Out) :

********** LEAVE NO BLANK SPACES ; USE N/A **********

Fraction	1→8	9 TB									PH
VOAh /*	3	3									N/A
500ml PB	1										<2
250ml PB Bora...	1										>12
125ml PB	1										—

h:HCl na:Sodium Hydoxide znna:Zinc Acetate/Sodium Hydroxide s: H2SO4 n:HNO3 n/f:HNO3-Field filtered n/f/l:HNO3-Lab filtered
CGJ:Clear Glass Jar CGB:Clear Glass Bottle AGJ:Amber Glass Jar AGB:Amber Glass Bottle PB: Poly Bottle E:Encore Sampler V:VOA SL:Sleeve
* Number of VOA's w/ Headspace present

LOGGED BY/DATE: AB 01/17/02 REVIEWED BY/DATE: [signature] 1/18/02

PRC Ver. 6 081401 KRF QANACA01\W:\Precis\Sample Control Forms

SEVERN
TRENT
SERVICES

Analytical Report

000006

EXECUTIVE SUMMARY - Detection Highlights

E2A170314

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
PTI-MW4-052 01/17/02 08:15 001				
Cadmium	0.41	0.010	mg/L	SW846 6010B
Chromium	24.4	0.020	mg/L	SW846 6010B
1,1-Dichloroethane	55	10	ug/L	SW846 8260B
1,2-Dichloroethane	160	10	ug/L	SW846 8260B
1,1-Dichloroethene	31	10	ug/L	SW846 8260B
cis-1,2-Dichloroethene	63	10	ug/L	SW846 8260B
Ethylbenzene	680	10	ug/L	SW846 8260B
Methylene chloride	20	10	ug/L	SW846 8260B
Trichloroethene	130	10	ug/L	SW846 8260B
pH	6.7	0.10	No Units	SW846 9040B
PTI-MW35-052 01/17/02 07:15 002				
Cadmium	0.35	0.0050	mg/L	SW846 6010B
Chromium	18.9	0.010	mg/L	SW846 6010B
1,1-Dichloroethane	58	10	ug/L	SW846 8260B
1,2-Dichloroethane	160	10	ug/L	SW846 8260B
1,1-Dichloroethene	32	10	ug/L	SW846 8260B
cis-1,2-Dichloroethene	70	10	ug/L	SW846 8260B
Ethylbenzene	720	10	ug/L	SW846 8260B
Methylene chloride	24	10	ug/L	SW846 8260B
Trichloroethene	140	10	ug/L	SW846 8260B
pH	6.9	0.10	No Units	SW846 9040B
PTI-MW16-052 01/17/02 09:25 003				
Chromium	0.11	0.010	mg/L	SW846 6010B
1,1-Dichloroethane	100	2.0	ug/L	SW846 8260B
1,2-Dichloroethane	39	2.0	ug/L	SW846 8260B
1,1-Dichloroethene	11	2.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	8.3	2.0	ug/L	SW846 8260B
Trichloroethene	31	2.0	ug/L	SW846 8260B
pH	7.2	0.10	No Units	SW846 9040B
PTI-MW9-052 01/17/02 10:10 004				
Chromium	0.16	0.010	mg/L	SW846 6010B
Chloroform	35	2.5	ug/L	SW846 8260B
1,1-Dichloroethane	89	2.5	ug/L	SW846 8260B
1,2-Dichloroethane	140	2.5	ug/L	SW846 8260B
1,1-Dichloroethene	43	2.5	ug/L	SW846 8260B
cis-1,2-Dichloroethene	5.3	2.5	ug/L	SW846 8260B
Methylene chloride	14	2.5	ug/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

E2A170314

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
PTI-MW9-052 01/17/02 10:10 004				
Tetrachloroethene	4.4	2.5	ug/L	SW846 8260B
1,1,1-Trichloroethane	3.6	2.5	ug/L	SW846 8260B
Trichloroethene	200	2.5	ug/L	SW846 8260B
pH	7.1	0.10	No Units	SW846 9040B
PTI-MW37-052 01/17/02 12:05 005				
Chromium	0.15	0.010	mg/L	SW846 6010B
Chloroform	36	2.5	ug/L	SW846 8260B
1,1-Dichloroethane	91	2.5	ug/L	SW846 8260B
1,2-Dichloroethane	150	2.5	ug/L	SW846 8260B
1,1-Dichloroethene	44	2.5	ug/L	SW846 8260B
cis-1,2-Dichloroethene	5.3	2.5	ug/L	SW846 8260B
Methylene chloride	15	2.5	ug/L	SW846 8260B
Tetrachloroethene	4.2	2.5	ug/L	SW846 8260B
1,1,1-Trichloroethane	3.8	2.5	ug/L	SW846 8260B
Trichloroethene	200	2.5	ug/L	SW846 8260B
pH	7.1	0.10	No Units	SW846 9040B
PTI-MW7-052 01/17/02 12:30 006				
Copper	0.034	0.025	mg/L	SW846 6010B
1,1-Dichloroethane	8.7	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	15	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	1.2	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	2.1	1.0	ug/L	SW846 8260B
Tetrachloroethene	1.4	1.0	ug/L	SW846 8260B
Trichloroethene	15	1.0	ug/L	SW846 8260B
pH	7.2	0.10	No Units	SW846 9040B
PTI-MW11-052 01/17/02 13:30 007				
1,1-Dichloroethane	120	25	ug/L	SW846 8260B
1,1-Dichloroethene	44	25	ug/L	SW846 8260B
cis-1,2-Dichloroethene	54	25	ug/L	SW846 8260B
Ethylbenzene	1900	25	ug/L	SW846 8260B
Toluene	31	25	ug/L	SW846 8260B
Trichloroethene	630	25	ug/L	SW846 8260B
m-Xylene & p-Xylene	410	25	ug/L	SW846 8260B
o-Xylene	89	25	ug/L	SW846 8260B
pH	7.1	0.10	No Units	SW846 9040B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

E2A170314

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
PTI-EB03-052 01/17/02 14:00 008				
pH	7.4	0.10	No Units	SW846 9040B

METHODS SUMMARY

E2A170314

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040B	SW846 9040B
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3005A
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

E2A170314

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ERV01	001	PTI-MW4-052	01/17/02	08:15
ERV04	002	PTI-MW35-052	01/17/02	07:15
ERV06	003	PTI-MW16-052	01/17/02	09:25
ERV07	004	PTI-MW9-052	01/17/02	10:10
ERV09	005	PTI-MW37-052	01/17/02	12:05
ERV1A	006	PTI-MW7-052	01/17/02	12:30
ERV1C	007	PTI-MW11-052	01/17/02	13:30
ERV1D	008	PTI-EB03-052	01/17/02	14:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW4-052

GC/MS Volatiles

Lot-Sample #...: E2A170314-001 **Work Order #...:** ERV011AA **Matrix.........:** WATER
Date Sampled...: 01/17/02 08:15 **Date Received..:** 01/17/02 14:55 **MS Run #.......:** 2018140
Prep Date......: 01/17/02 **Analysis Date..:** 01/17/02
Prep Batch #...: 2018366 **Analysis Time..:** 23:43
Method.........: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	10	ug/L	3.0
Bromodichloromethane	ND	10	ug/L	3.0
Bromoform	ND	10	ug/L	3.0
Bromomethane	ND	20	ug/L	10
Carbon tetrachloride	ND	10	ug/L	3.0
Chlorobenzene	ND	10	ug/L	3.0
Dibromochloromethane	ND	10	ug/L	4.0
Chloroethane	ND	20	ug/L	3.0
Chloroform	ND	10	ug/L	3.0
Chloromethane	ND	20	ug/L	3.0
1,2-Dichlorobenzene	ND	10	ug/L	3.0
1,3-Dichlorobenzene	ND	10	ug/L	3.0
1,4-Dichlorobenzene	ND	10	ug/L	3.0
1,1-Dichloroethane	**55**	**10**	**ug/L**	**2.0**
1,2-Dichloroethane	**160**	**10**	**ug/L**	**4.0**
1,1-Dichloroethene	**31**	**10**	**ug/L**	**3.0**
cis-1,2-Dichloroethene	**63**	**10**	**ug/L**	**3.0**
trans-1,2-Dichloroethene	ND	10	ug/L	3.0
1,2-Dichloropropane	ND	10	ug/L	3.0
cis-1,3-Dichloropropene	ND	10	ug/L	3.0
trans-1,3-Dichloropropene	ND	10	ug/L	5.0
Ethylbenzene	**680**	**10**	**ug/L**	**2.0**
Methylene chloride	**20**	**10**	**ug/L**	**3.0**
1,1,2,2-Tetrachloroethane	ND	10	ug/L	4.0
Tetrachloroethene	ND	10	ug/L	3.0
Toluene	ND	10	ug/L	3.0
1,1,1-Trichloroethane	ND	10	ug/L	2.0
1,1,2-Trichloroethane	ND	10	ug/L	3.0
Trichloroethene	**130**	**10**	**ug/L**	**3.0**
Trichlorofluoromethane	ND	20	ug/L	3.0
Vinyl chloride	ND	20	ug/L	3.0
m-Xylene & p-Xylene	ND	10	ug/L	5.0
o-Xylene	ND	10	ug/L	2.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	104	(75 - 130)
1,2-Dichloroethane-d4	112	(65 - 135)
Toluene-d8	101	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW35-052

GC/MS Volatiles

Lot-Sample #...:	E2A170314-002	**Work Order #...:**	ERV041AA	**Matrix.........:**	WATER
Date Sampled...:	01/17/02 07:15	**Date Received..:**	01/17/02 14:55	**MS Run #.......:**	2021137
Prep Date......:	01/18/02	**Analysis Date..:**	01/18/02		
Prep Batch #...:	2021371	**Analysis Time..:**	23:32		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	10	ug/L	3.0
Bromodichloromethane	ND	10	ug/L	3.0
Bromoform	ND	10	ug/L	3.0
Bromomethane	ND	20	ug/L	10
Carbon tetrachloride	ND	10	ug/L	3.0
Chlorobenzene	ND	10	ug/L	3.0
Dibromochloromethane	ND	10	ug/L	4.0
Chloroethane	ND	20	ug/L	3.0
Chloroform	ND	10	ug/L	3.0
Chloromethane	ND	20	ug/L	3.0
1,2-Dichlorobenzene	ND	10	ug/L	3.0
1,3-Dichlorobenzene	ND	10	ug/L	3.0
1,4-Dichlorobenzene	ND	10	ug/L	3.0
1,1-Dichloroethane	**58**	**10**	**ug/L**	**2.0**
1,2-Dichloroethane	**160**	**10**	**ug/L**	**4.0**
1,1-Dichloroethene	**32**	**10**	**ug/L**	**3.0**
cis-1,2-Dichloroethene	**70**	**10**	**ug/L**	**3.0**
trans-1,2-Dichloroethene	ND	10	ug/L	3.0
1,2-Dichloropropane	ND	10	ug/L	3.0
cis-1,3-Dichloropropene	ND	10	ug/L	3.0
trans-1,3-Dichloropropene	ND	10	ug/L	5.0
Ethylbenzene	**720**	**10**	**ug/L**	**2.0**
Methylene chloride	**24**	**10**	**ug/L**	**3.0**
1,1,2,2-Tetrachloroethane	ND	10	ug/L	4.0
Tetrachloroethene	ND	10	ug/L	3.0
Toluene	ND	10	ug/L	3.0
1,1,1-Trichloroethane	ND	10	ug/L	2.0
1,1,2-Trichloroethane	ND	10	ug/L	3.0
Trichloroethene	**140**	**10**	**ug/L**	**3.0**
Trichlorofluoromethane	ND	20	ug/L	3.0
Vinyl chloride	ND	20	ug/L	3.0
m-Xylene & p-Xylene	ND	10	ug/L	5.0
o-Xylene	ND	10	ug/L	2.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	102	(75 - 130)
1,2-Dichloroethane-d4	117	(65 - 135)
Toluene-d8	103	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW16-052

GC/MS Volatiles

Lot-Sample #...:	E2A170314-003	**Work Order #...:**	ERV061AA	**Matrix.........:**	WATER
Date Sampled...:	01/17/02 09:25	**Date Received..:**	01/17/02 14:55	**MS Run #.......:**	2018140
Prep Date......:	01/18/02	**Analysis Date..:**	01/18/02		
Prep Batch #...:	2018366	**Analysis Time..:**	00:42		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	2.0	ug/L	0.60
Bromodichloromethane	ND	2.0	ug/L	0.60
Bromoform	ND	2.0	ug/L	0.60
Bromomethane	ND	4.0	ug/L	2.0
Carbon tetrachloride	ND	2.0	ug/L	0.60
Chlorobenzene	ND	2.0	ug/L	0.60
Dibromochloromethane	ND	2.0	ug/L	0.80
Chloroethane	ND	4.0	ug/L	0.60
Chloroform	ND	2.0	ug/L	0.60
Chloromethane	ND	4.0	ug/L	0.60
1,2-Dichlorobenzene	ND	2.0	ug/L	0.60
1,3-Dichlorobenzene	ND	2.0	ug/L	0.60
1,4-Dichlorobenzene	ND	2.0	ug/L	0.60
1,1-Dichloroethane	**100**	**2.0**	**ug/L**	**0.40**
1,2-Dichloroethane	**39**	**2.0**	**ug/L**	**0.80**
1,1-Dichloroethene	**11**	**2.0**	**ug/L**	**0.60**
cis-1,2-Dichloroethene	**8.3**	**2.0**	**ug/L**	**0.60**
trans-1,2-Dichloroethene	ND	2.0	ug/L	0.60
1,2-Dichloropropane	ND	2.0	ug/L	0.60
cis-1,3-Dichloropropene	ND	2.0	ug/L	0.60
trans-1,3-Dichloropropene	ND	2.0	ug/L	1.0
Ethylbenzene	ND	2.0	ug/L	0.40
Methylene chloride	ND	2.0	ug/L	0.60
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L	0.80
Tetrachloroethene	ND	2.0	ug/L	0.60
Toluene	ND	2.0	ug/L	0.60
1,1,1-Trichloroethane	ND	2.0	ug/L	0.40
1,1,2-Trichloroethane	ND	2.0	ug/L	0.60
Trichloroethene	**31**	**2.0**	**ug/L**	**0.60**
Trichlorofluoromethane	ND	4.0	ug/L	0.60
Vinyl chloride	ND	4.0	ug/L	0.60
m-Xylene & p-Xylene	ND	2.0	ug/L	1.0
o-Xylene	ND	2.0	ug/L	0.40

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	101	(75 - 130)
1,2-Dichloroethane-d4	121	(65 - 135)
Toluene-d8	102	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW9-052

GC/MS Volatiles

Lot-Sample #...: E2A170314-004 **Work Order #...:** ERV071AA **Matrix.........:** WATER
Date Sampled...: 01/17/02 10:10 **Date Received..:** 01/17/02 14:55 **MS Run #.......:** 2018140
Prep Date......: 01/18/02 **Analysis Date..:** 01/18/02
Prep Batch #...: 2018366 **Analysis Time..:** 01:12
Method.........: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	2.5	ug/L	0.75
Bromodichloromethane	ND	2.5	ug/L	0.75
Bromoform	ND	2.5	ug/L	0.75
Bromomethane	ND	5.0	ug/L	2.5
Carbon tetrachloride	ND	2.5	ug/L	0.75
Chlorobenzene	ND	2.5	ug/L	0.75
Dibromochloromethane	ND	2.5	ug/L	1.0
Chloroethane	ND	5.0	ug/L	0.75
Chloroform	**35**	**2.5**	**ug/L**	**0.75**
Chloromethane	ND	5.0	ug/L	0.75
1,2-Dichlorobenzene	ND	2.5	ug/L	0.75
1,3-Dichlorobenzene	ND	2.5	ug/L	0.75
1,4-Dichlorobenzene	ND	2.5	ug/L	0.75
1,1-Dichloroethane	**89**	**2.5**	**ug/L**	**0.50**
1,2-Dichloroethane	**140**	**2.5**	**ug/L**	**1.0**
1,1-Dichloroethene	**43**	**2.5**	**ug/L**	**0.75**
cis-1,2-Dichloroethene	**5.3**	**2.5**	**ug/L**	**0.75**
trans-1,2-Dichloroethene	ND	2.5	ug/L	0.75
1,2-Dichloropropane	ND	2.5	ug/L	0.75
cis-1,3-Dichloropropene	ND	2.5	ug/L	0.75
trans-1,3-Dichloropropene	ND	2.5	ug/L	1.2
Ethylbenzene	ND	2.5	ug/L	0.50
Methylene chloride	**14**	**2.5**	**ug/L**	**0.75**
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L	1.0
Tetrachloroethene	**4.4**	**2.5**	**ug/L**	**0.75**
Toluene	ND	2.5	ug/L	0.75
1,1,1-Trichloroethane	**3.6**	**2.5**	**ug/L**	**0.50**
1,1,2-Trichloroethane	ND	2.5	ug/L	0.75
Trichloroethene	**200**	**2.5**	**ug/L**	**0.75**
Trichlorofluoromethane	ND	5.0	ug/L	0.75
Vinyl chloride	ND	5.0	ug/L	0.75
m-Xylene & p-Xylene	ND	2.5	ug/L	1.2
o-Xylene	ND	2.5	ug/L	0.50

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	105	(75 - 130)
1,2-Dichloroethane-d4	113	(65 - 135)
Toluene-d8	104	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW37-052

GC/MS Volatiles

Lot-Sample #...: E2A170314-005 **Work Order #...:** ERV091AA **Matrix.........:** WATER
Date Sampled...: 01/17/02 12:05 **Date Received..:** 01/17/02 14:55 **MS Run #.......:** 2018140
Prep Date......: 01/18/02 **Analysis Date..:** 01/18/02
Prep Batch #...: 2018366 **Analysis Time..:** 01:41
Method.........: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	2.5	ug/L	0.75
Bromodichloromethane	ND	2.5	ug/L	0.75
Bromoform	ND	2.5	ug/L	0.75
Bromomethane	ND	5.0	ug/L	2.5
Carbon tetrachloride	ND	2.5	ug/L	0.75
Chlorobenzene	ND	2.5	ug/L	0.75
Dibromochloromethane	ND	2.5	ug/L	1.0
Chloroethane	ND	5.0	ug/L	0.75
Chloroform	**36**	**2.5**	**ug/L**	**0.75**
Chloromethane	ND	5.0	ug/L	0.75
1,2-Dichlorobenzene	ND	2.5	ug/L	0.75
1,3-Dichlorobenzene	ND	2.5	ug/L	0.75
1,4-Dichlorobenzene	ND	2.5	ug/L	0.75
1,1-Dichloroethane	**91**	**2.5**	**ug/L**	**0.50**
1,2-Dichloroethane	**150**	**2.5**	**ug/L**	**1.0**
1,1-Dichloroethene	**44**	**2.5**	**ug/L**	**0.75**
cis-1,2-Dichloroethene	**5.3**	**2.5**	**ug/L**	**0.75**
trans-1,2-Dichloroethene	ND	2.5	ug/L	0.75
1,2-Dichloropropane	ND	2.5	ug/L	0.75
cis-1,3-Dichloropropene	ND	2.5	ug/L	0.75
trans-1,3-Dichloropropene	ND	2.5	ug/L	1.2
Ethylbenzene	ND	2.5	ug/L	0.50
Methylene chloride	**15**	**2.5**	**ug/L**	**0.75**
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L	1.0
Tetrachloroethene	**4.2**	**2.5**	**ug/L**	**0.75**
Toluene	ND	2.5	ug/L	0.75
1,1,1-Trichloroethane	**3.8**	**2.5**	**ug/L**	**0.50**
1,1,2-Trichloroethane	ND	2.5	ug/L	0.75
Trichloroethene	**200**	**2.5**	**ug/L**	**0.75**
Trichlorofluoromethane	ND	5.0	ug/L	0.75
Vinyl chloride	ND	5.0	ug/L	0.75
m-Xylene & p-Xylene	ND	2.5	ug/L	1.2
o-Xylene	ND	2.5	ug/L	0.50

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	106	(75 - 130)
1,2-Dichloroethane-d4	135	(65 - 135)
Toluene-d8	106	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW7-052

GC/MS Volatiles

Lot-Sample #...:	E2A170314-006	**Work Order #...:**	ERV1A1AA	**Matrix.........:**	WATER
Date Sampled...:	01/17/02 12:30	**Date Received..:**	01/17/02 14:55	**MS Run #.......:**	2018140
Prep Date......:	01/18/02	**Analysis Date..:**	01/18/02		
Prep Batch #...:	2018366	**Analysis Time..:**	02:11		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	**8.7**	**1.0**	**ug/L**	**0.20**
1,2-Dichloroethane	**15**	**1.0**	**ug/L**	**0.40**
1,1-Dichloroethene	**1.2**	**1.0**	**ug/L**	**0.30**
cis-1,2-Dichloroethene	**2.1**	**1.0**	**ug/L**	**0.30**
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	**1.4**	**1.0**	**ug/L**	**0.30**
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	**15**	**1.0**	**ug/L**	**0.30**
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	99	(75 - 130)
1,2-Dichloroethane-d4	112	(65 - 135)
Toluene-d8	98	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW11-052

GC/MS Volatiles

Lot-Sample #...: E2A170314-007 **Work Order #...:** ERV1C1AA **Matrix.........:** WATER
Date Sampled...: 01/17/02 13:30 **Date Received..:** 01/17/02 14:55 **MS Run #.......:** 2018140
Prep Date......: 01/18/02 **Analysis Date..:** 01/18/02
Prep Batch #...: 2018366 **Analysis Time..:** 02:40
Method.........: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	25	ug/L	7.5
Bromodichloromethane	ND	25	ug/L	7.5
Bromoform	ND	25	ug/L	7.5
Bromomethane	ND	50	ug/L	25
Carbon tetrachloride	ND	25	ug/L	7.5
Chlorobenzene	ND	25	ug/L	7.5
Dibromochloromethane	ND	25	ug/L	10
Chloroethane	ND	50	ug/L	7.5
Chloroform	ND	25	ug/L	7.5
Chloromethane	ND	50	ug/L	7.5
1,2-Dichlorobenzene	ND	25	ug/L	7.5
1,3-Dichlorobenzene	ND	25	ug/L	7.5
1,4-Dichlorobenzene	ND	25	ug/L	7.5
1,1-Dichloroethane	**120**	**25**	**ug/L**	**5.0**
1,2-Dichloroethane	ND	25	ug/L	10
1,1-Dichloroethene	**44**	**25**	**ug/L**	**7.5**
cis-1,2-Dichloroethene	**54**	**25**	**ug/L**	**7.5**
trans-1,2-Dichloroethene	ND	25	ug/L	7.5
1,2-Dichloropropane	ND	25	ug/L	7.5
cis-1,3-Dichloropropene	ND	25	ug/L	7.5
trans-1,3-Dichloropropene	ND	25	ug/L	12
Ethylbenzene	**1900**	**25**	**ug/L**	**5.0**
Methylene chloride	ND	25	ug/L	7.5
1,1,2,2-Tetrachloroethane	ND	25	ug/L	10
Tetrachloroethene	ND	25	ug/L	7.5
Toluene	**31**	**25**	**ug/L**	**7.5**
1,1,1-Trichloroethane	ND	25	ug/L	5.0
1,1,2-Trichloroethane	ND	25	ug/L	7.5
Trichloroethene	**630**	**25**	**ug/L**	**7.5**
Trichlorofluoromethane	ND	50	ug/L	7.5
Vinyl chloride	ND	50	ug/L	7.5
m-Xylene & p-Xylene	**410**	**25**	**ug/L**	**12**
o-Xylene	**89**	**25**	**ug/L**	**5.0**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	112	(75 - 130)
1,2-Dichloroethane-d4	114	(65 - 135)
Toluene-d8	107	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB03-052

GC/MS Volatiles

Lot-Sample #...:	E2A170314-008	**Work Order #...:**	ERV1D1AA	**Matrix.........:**	WATER
Date Sampled...:	01/17/02 14:00	**Date Received..:**	01/17/02 14:55	**MS Run #.......:**	2018140
Prep Date......:	01/17/02	**Analysis Date..:**	01/17/02		
Prep Batch #...:	2018366	**Analysis Time..:**	21:15		
		Method.........:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzene	ND	1.0	ug/L	0.30
Bromodichloromethane	ND	1.0	ug/L	0.30
Bromoform	ND	1.0	ug/L	0.30
Bromomethane	ND	2.0	ug/L	1.0
Carbon tetrachloride	ND	1.0	ug/L	0.30
Chlorobenzene	ND	1.0	ug/L	0.30
Dibromochloromethane	ND	1.0	ug/L	0.40
Chloroethane	ND	2.0	ug/L	0.30
Chloroform	ND	1.0	ug/L	0.30
Chloromethane	ND	2.0	ug/L	0.30
1,2-Dichlorobenzene	ND	1.0	ug/L	0.30
1,3-Dichlorobenzene	ND	1.0	ug/L	0.30
1,4-Dichlorobenzene	ND	1.0	ug/L	0.30
1,1-Dichloroethane	ND	1.0	ug/L	0.20
1,2-Dichloroethane	ND	1.0	ug/L	0.40
1,1-Dichloroethene	ND	1.0	ug/L	0.30
cis-1,2-Dichloroethene	ND	1.0	ug/L	0.30
trans-1,2-Dichloroethene	ND	1.0	ug/L	0.30
1,2-Dichloropropane	ND	1.0	ug/L	0.30
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.30
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.50
Ethylbenzene	ND	1.0	ug/L	0.20
Methylene chloride	ND	1.0	ug/L	0.30
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.40
Tetrachloroethene	ND	1.0	ug/L	0.30
Toluene	ND	1.0	ug/L	0.30
1,1,1-Trichloroethane	ND	1.0	ug/L	0.20
1,1,2-Trichloroethane	ND	1.0	ug/L	0.30
Trichloroethene	ND	1.0	ug/L	0.30
Trichlorofluoromethane	ND	2.0	ug/L	0.30
Vinyl chloride	ND	2.0	ug/L	0.30
m-Xylene & p-Xylene	ND	1.0	ug/L	0.50
o-Xylene	ND	1.0	ug/L	0.20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	97	(75 - 130)
1,2-Dichloroethane-d4	111	(65 - 135)
Toluene-d8	98	(80 - 130)

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW4-052

General Chemistry

Lot-Sample #...: E2A170314-001 **Work Order #...:** ERV01 **Matrix.........:** WATER
Date Sampled...: 01/17/02 08:15 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**6.7**	**0.10**	**No Units**	**SW846 9040B**	**01/17/02**	**2017465**
	Analysis Time..: 16:08			MS Run #.......: 2017245	MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW35-052

General Chemistry

Lot-Sample #...: E2A170314-002 **Work Order #...:** ERV04 **Matrix.........:** WATER
Date Sampled...: 01/17/02 07:15 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**6.9**	**0.10**	**No Units**	**SW846 9040B**	**01/17/02**	**2017465**
		Analysis Time..: 16:12		MS Run #.......: 2017245	MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW16-052

General Chemistry

Lot-Sample #...: E2A170314-003 **Work Order #...:** ERV06 **Matrix.........:** WATER
Date Sampled...: 01/17/02 09:25 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**7.2**	**0.10**	**No Units**	**SW846 9040B**	**01/17/02**	**2017465**
	Analysis Time..: 16:14		MS Run #.......: 2017245		MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW9-052

General Chemistry

Lot-Sample #...: E2A170314-004 **Work Order #...:** ERV07 **Matrix.........:** WATER
Date Sampled...: 01/17/02 10:10 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**7.1**	**0.10**	**No Units**	**SW846 9040B**	**01/17/02**	**2017465**

Analysis Time..: 16:16 MS Run #.......: 2017245 MDL...........:

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW37-052

General Chemistry

Lot-Sample #...: E2A170314-005 **Work Order #...:** ERV09 **Matrix.........:** WATER
Date Sampled...: 01/17/02 12:05 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**7.1**	**0.10**	**No Units**	**SW846 9040B**	**01/17/02**	**2017465**
	Analysis Time..: 16:18			MS Run #.......: 2017245	MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW7-052

General Chemistry

Lot-Sample #...: E2A170314-006 **Work Order #...:** ERV1A **Matrix.........:** WATER
Date Sampled...: 01/17/02 12:30 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.2	0.10	No Units	SW846 9040B	01/17/02	2017465
	Analysis Time..: 16:20		MS Run #.......: 2017245		MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW11-052

General Chemistry

Lot-Sample #...: E2A170314-007 **Work Order #...:** ERV1C **Matrix.........:** WATER
Date Sampled...: 01/17/02 13:30 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	7.1	0.10	No Units	SW846 9040B	01/17/02	2017465

Analysis Time..: 16:22 MS Run #.......: 2017245 MDL............:

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB03-052

General Chemistry

Lot-Sample #...: E2A170314-008 **Work Order #...:** ERV1D **Matrix.........:** WATER
Date Sampled...: 01/17/02 14:00 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH	**7.4**	**0.10**	**No Units**	**SW846 9040B**	**01/17/02**	**2017465**
	Analysis Time..: 16:24			MS Run #.......: 2017245	MDL...........:	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW4-052

TOTAL Metals

Lot-Sample #...: E2A170314-001 **Matrix.......:** WATER
Date Sampled...: 01/17/02 08:15 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	**0.41**	**0.010**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV011AC**
		Analysis Time..: 12:49		MS Run #.......: 2018064	MDL............: 0.0012	
Chromium	**24.4**	**0.020**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV011AD**
		Analysis Time..: 12:49		MS Run #.......: 2018064	MDL............: 0.0020	
Copper	ND G	0.050	mg/L	SW846 6010B	01/18-01/19/02	ERV011AE
		Analysis Time..: 12:49		MS Run #.......: 2018064	MDL............: 0.0080	

NOTE(S):

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW35-052

TOTAL Metals

Lot-Sample #...: E2A170314-002 **Matrix.......:** WATER
Date Sampled...: 01/17/02 07:15 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	**0.35**	**0.0050**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV041AC**
		Analysis Time..: 13:48		MS Run #.......: 2018064	MDL...........: 0.00060	
Chromium	**18.9**	**0.010**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV041AD**
		Analysis Time..: 13:48		MS Run #.......: 2018064	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/18-01/19/02	ERV041AE
		Analysis Time..: 13:48		MS Run #.......: 2018064	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW16-052

TOTAL Metals

Lot-Sample #...: E2A170314-003 **Matrix.......:** WATER
Date Sampled...: 01/17/02 09:25 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/18-01/19/02	ERV061AC
		Analysis Time..: 13:55		MS Run #.......: 2018064	MDL...........: 0.00060	
Chromium	**0.11**	**0.010**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV061AD**
		Analysis Time..: 13:55		MS Run #.......: 2018064	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/18-01/19/02	ERV061AE
		Analysis Time..: 13:55		MS Run #.......: 2018064	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW9-052

TOTAL Metals

Lot-Sample #...: E2A170314-004 **Matrix.......:** WATER
Date Sampled...: 01/17/02 10:10 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/18-01/19/02	ERV071AC
		Analysis Time..: 14:03		MS Run #.......: 2018064	MDL...........: 0.00060	
Chromium	**0.16**	**0.010**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV071AD**
		Analysis Time..: 14:03		MS Run #.......: 2018064	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/18-01/19/02	ERV071AE
		Analysis Time..: 14:03		MS Run #.......: 2018064	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW37-052

TOTAL Metals

Lot-Sample #...: E2A170314-005 **Matrix.......:** WATER
Date Sampled...: 01/17/02 12:05 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/18-01/19/02	ERV091AC
		Analysis Time..: 14:11		MS Run #.......: 2018064	MDL............: 0.00060	
Chromium	**0.15**	**0.010**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV091AD**
		Analysis Time..: 14:11		MS Run #.......: 2018064	MDL............: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/18-01/19/02	ERV091AE
		Analysis Time..: 14:11		MS Run #.......: 2018064	MDL............: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW7-052

TOTAL Metals

Lot-Sample #...: E2A170314-006 **Matrix.......:** WATER
Date Sampled...: 01/17/02 12:30 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/18-01/19/02	ERV1A1AC
		Analysis Time..: 14:19		MS Run #.......: 2018064	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/18-01/19/02	ERV1A1AD
		Analysis Time..: 14:19		MS Run #.......: 2018064	MDL...........: 0.0010	
Copper	**0.034**	**0.025**	**mg/L**	**SW846 6010B**	**01/18-01/19/02**	**ERV1A1AE**
		Analysis Time..: 14:19		MS Run #.......: 2018064	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-MW11-052

TOTAL Metals

Lot-Sample #...: E2A170314-007 **Matrix.......:** WATER
Date Sampled...: 01/17/02 13:30 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/18-01/19/02	ERV1C1AC
		Analysis Time..: 14:27		MS Run #.......: 2018064	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/18-01/19/02	ERV1C1AD
		Analysis Time..: 14:27		MS Run #.......: 2018064	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/18-01/19/02	ERV1C1AE
		Analysis Time..: 14:27		MS Run #.......: 2018064	MDL...........: 0.0040	

PHIBRO-TECH, INC.

Client Sample ID: PTI-EB03-052

TOTAL Metals

Lot-Sample #...: E2A170314-008 **Matrix.......:** WATER
Date Sampled...: 01/17/02 14:00 **Date Received..:** 01/17/02 14:55

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2018223						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/18-01/19/02	ERV1D1AC
		Analysis Time..: 14:35		MS Run #.......: 2018064	MDL...........: 0.00060	
Chromium	ND	0.010	mg/L	SW846 6010B	01/18-01/19/02	ERV1D1AD
		Analysis Time..: 14:35		MS Run #.......: 2018064	MDL...........: 0.0010	
Copper	ND	0.025	mg/L	SW846 6010B	01/18-01/19/02	ERV1D1AE
		Analysis Time..: 14:35		MS Run #.......: 2018064	MDL...........: 0.0040	

SEVERN TRENT SERVICES

QA/QC

QC DATA ASSOCIATION SUMMARY

E2A170314

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2018366	2018140
	WATER	SW846 6010B		2018223	2018064
002	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2021371	2021137
	WATER	SW846 6010B		2018223	2018064
003	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2018366	2018140
	WATER	SW846 6010B		2018223	2018064
004	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2018366	2018140
	WATER	SW846 6010B		2018223	2018064
005	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2018366	2018140
	WATER	SW846 6010B		2018223	2018064
006	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2018366	2018140
	WATER	SW846 6010B		2018223	2018064
007	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2018366	2018140
	WATER	SW846 6010B		2018223	2018064
008	WATER	SW846 9040B		2017465	2017245
	WATER	SW846 8260B		2018366	2018140
	WATER	SW846 6010B		2018223	2018064

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ERXN41AA **Matrix.........:** WATER
MB Lot-Sample #: E2A180000-366
Prep Date......: 01/17/02 **Analysis Time..:** 19:46
Analysis Date..: 01/17/02 **Prep Batch #...:** 2018366

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	101	(75 - 130)
1,2-Dichloroethane-d4	106	(65 - 135)
Toluene-d8	102	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ER1D91AA **Matrix.........:** WATER
MB Lot-Sample #: E2A210000-371
Prep Date......: 01/18/02 **Analysis Time..:** 18:06
Analysis Date..: 01/18/02 **Prep Batch #...:** 2021371

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	105	(75 - 130)
1,2-Dichloroethane-d4	110	(65 - 135)
Toluene-d8	102	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: E2A170314 **Matrix.........:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: E2A180000-223 **Prep Batch #...:** 2018223						
Cadmium	ND	0.0050	mg/L	SW846 6010B	01/18/02	ERWPJ1AA
		Analysis Time..: 22:22				
Chromium	ND	0.010	mg/L	SW846 6010B	01/18/02	ERWPJ1AC
		Analysis Time..: 22:22				
Copper	ND	0.025	mg/L	SW846 6010B	01/18/02	ERWPJ1AD
		Analysis Time..: 22:22				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ERXN41AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A180000-366
Prep Date......: 01/17/02 **Analysis Date..:** 01/17/02
Prep Batch #...: 2018366 **Analysis Time..:** 18:46

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**8.51**	**ug/L**	**85**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.28**	**ug/L**	**93**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**8.53**	**ug/L**	**85**	**SW846 8260B**
Toluene	**10.0**	**9.17**	**ug/L**	**92**	**SW846 8260B**
Trichloroethene	**10.0**	**9.42**	**ug/L**	**94**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	106	(75 - 130)
1,2-Dichloroethane-d4	105	(65 - 135)
Toluene-d8	104	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ER1D91AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A210000-371
Prep Date......: 01/18/02 **Analysis Date..:** 01/18/02
Prep Batch #...: 2021371 **Analysis Time..:** 17:07

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**9.44**	**ug/L**	**94**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.47**	**ug/L**	**95**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**8.33**	**ug/L**	**83**	**SW846 8260B**
Toluene	**10.0**	**9.37**	**ug/L**	**94**	**SW846 8260B**
Trichloroethene	**10.0**	**9.69**	**ug/L**	**97**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	108	(75 - 130)
1,2-Dichloroethane-d4	109	(65 - 135)
Toluene-d8	107	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: E2A170314 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH			Work Order #: ERV251AA	LCS Lot-Sample#: E2A170000-465			
	9.18	9.18	No Units	100	SW846 9040B	01/17/02	2017465
			Analysis Time..: 16:06				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E2A170314 **Matrix.........:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A180000-223 **Prep Batch #...:** 2018223							
Cadmium	0.0500	0.0475	mg/L	95	SW846 6010B	01/18/02	ERWPJ1AE
			Analysis Time..: 22:28				
Chromium	0.200	0.200	mg/L	100	SW846 6010B	01/18/02	ERWPJ1AF
			Analysis Time..: 22:28				
Copper	0.250	0.226	mg/L	90	SW846 6010B	01/18/02	ERWPJ1AG
			Analysis Time..: 22:28				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ERXN41AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A180000-366
Prep Date......: 01/17/02 **Analysis Date..:** 01/17/02
Prep Batch #...: 2018366 **Analysis Time..:** 18:46

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**85**	**(75 - 120)**	**SW846 8260B**
Chlorobenzene	**93**	**(75 - 120)**	**SW846 8260B**
1,1-Dichloroethene	**85**	**(70 - 140)**	**SW846 8260B**
Toluene	**92**	**(75 - 125)**	**SW846 8260B**
Trichloroethene	**94**	**(70 - 130)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	106	(75 - 130)
1,2-Dichloroethane-d4	105	(65 - 135)
Toluene-d8	104	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ER1D91AC **Matrix.........:** WATER
LCS Lot-Sample#: E2A210000-371
Prep Date......: 01/18/02 **Analysis Date..:** 01/18/02
Prep Batch #...: 2021371 **Analysis Time..:** 17:07

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**94**	**(75 - 120)**	**SW846 8260B**
Chlorobenzene	**95**	**(75 - 120)**	**SW846 8260B**
1,1-Dichloroethene	**83**	**(70 - 140)**	**SW846 8260B**
Toluene	**94**	**(75 - 125)**	**SW846 8260B**
Trichloroethene	**97**	**(70 - 130)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	108	(75 - 130)
1,2-Dichloroethane-d4	109	(65 - 135)
Toluene-d8	107	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A170314 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH		Work Order #: ERV251AA	LCS Lot-Sample#: E2A170000-465		
	100	(90 - 110)	SW846 9040B	01/17/02	2017465
		Analysis Time..: 16:06			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: E2A170314 **Matrix.........:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: E2A180000-223 **Prep Batch #...:** 2018223					
Cadmium	95	(80 - 120)	SW846 6010B	01/18/02	ERWPJ1AE
		Analysis Time..: 22:28			
Chromium	100	(85 - 120)	SW846 6010B	01/18/02	ERWPJ1AF
		Analysis Time..: 22:28			
Copper	90	(80 - 120)	SW846 6010B	01/18/02	ERWPJ1AG
		Analysis Time..: 22:28			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: E2A170314 **Matrix.........:** WATER
Date Sampled...: 01/17/02 08:15 **Date Received..:** 01/17/02 14:55

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A170314-001 **Prep Batch #...:** 2018223									
Cadmium									
	0.41	0.0500	0.461 N	mg/L			SW846 6010B	01/18-01/19/02	ERV011AJ
	0.41	0.0500	0.445 N	mg/L			SW846 6010B	01/18-01/19/02	ERV011AK
			Analysis Time..: 13:03						
			MS Run #.......: 2018064						
Chromium									
	24.4	0.200	24.7 NC	mg/L			SW846 6010B	01/18-01/19/02	ERV011AL
	24.4	0.200	23.9 NC	mg/L			SW846 6010B	01/18-01/19/02	ERV011AM
			Analysis Time..: 13:03						
			MS Run #.......: 2018064						
Copper									
	ND	0.250	0.269	mg/L	104		SW846 6010B	01/18-01/19/02	ERV011AN
	ND	0.250	0.260	mg/L	101	3.3	SW846 6010B	01/18-01/19/02	ERV011AP
			Analysis Time..: 13:03						
			MS Run #.......: 2018064						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ERV3D1AD-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A170319-004 ERV3D1AE-MSD
Date Sampled...: 01/16/02 11:18 **Date Received..:** 01/17/02 15:00 **MS Run #.......:** 2018140
Prep Date......: 01/18/02 **Analysis Date..:** 01/18/02
Prep Batch #...: 2018366 **Analysis Time..:** 03:39

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10.0**	**9.04**	**ug/L**	**90**		**SW846 8260B**
	ND	**10.0**	**9.22**	**ug/L**	**92**	**2.0**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**9.64**	**ug/L**	**96**		**SW846 8260B**
	ND	**10.0**	**9.80**	**ug/L**	**98**	**1.6**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**8.78**	**ug/L**	**88**		**SW846 8260B**
	ND	**10.0**	**9.05**	**ug/L**	**90**	**3.0**	**SW846 8260B**
Toluene	**ND**	**10.0**	**9.41**	**ug/L**	**94**		**SW846 8260B**
	ND	**10.0**	**9.39**	**ug/L**	**94**	**0.21**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**10.0**	**ug/L**	**100**		**SW846 8260B**
	ND	**10.0**	**10.1**	**ug/L**	**101**	**0.89**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	105	(75 - 130)
	104	(75 - 130)
1,2-Dichloroethane-d4	114	(65 - 135)
	112	(65 - 135)
Toluene-d8	102	(80 - 130)
	99	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ERW4D1AC-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A180188-002 ERW4D1AD-MSD
Date Sampled...: 01/17/02 10:40 **Date Received..:** 01/18/02 10:40 **MS Run #.......:** 2021137
Prep Date......: 01/19/02 **Analysis Date..:** 01/19/02
Prep Batch #...: 2021371 **Analysis Time..:** 02:58

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**10.0**	**11.0**	**ug/L**	**110**		**SW846 8260B**
	ND	**10.0**	**10.8**	**ug/L**	**108**	**1.3**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**11.6**	**ug/L**	**116**		**SW846 8260B**
	ND	**10.0**	**11.6**	**ug/L**	**116**	**0.51**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**10.8**	**ug/L**	**108**		**SW846 8260B**
	ND	**10.0**	**10.6**	**ug/L**	**106**	**1.8**	**SW846 8260B**
Toluene	**ND**	**10.0**	**11.3**	**ug/L**	**113**		**SW846 8260B**
	ND	**10.0**	**12.2**	**ug/L**	**122**	**7.8**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**11.8**	**ug/L**	**118**		**SW846 8260B**
	ND	**10.0**	**11.8**	**ug/L**	**118**	**0.25**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	107	(75 - 130)
	103	(75 - 130)
1,2-Dichloroethane-d4	109	(65 - 135)
	97	(65 - 135)
Toluene-d8	107	(80 - 130)
	111	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: E2A170314 **Matrix.........:** WATER
Date Sampled...: 01/17/02 08:15 **Date Received..:** 01/17/02 14:55

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: E2A170314-001 **Prep Batch #...:** 2018223							
Cadmium	NC	(80 - 120)			SW846 6010B	01/18-01/19/02	ERV011AJ
	NC	(80 - 120)		(0-20)	SW846 6010B	01/18-01/19/02	ERV011AK
		Analysis Time..: 13:03					
		MS Run #.......: 2018064					
Chromium	NC	(85 - 120)			SW846 6010B	01/18-01/19/02	ERV011AL
	NC	(85 - 120)		(0-20)	SW846 6010B	01/18-01/19/02	ERV011AM
		Analysis Time..: 13:03					
		MS Run #.......: 2018064					
Copper	104	(80 - 120)			SW846 6010B	01/18-01/19/02	ERV011AN
	101	(80 - 120)	3.3	(0-20)	SW846 6010B	01/18-01/19/02	ERV011AP
		Analysis Time..: 13:03					
		MS Run #.......: 2018064					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ERV3D1AD-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A170319-004 ERV3D1AE-MSD
Date Sampled...: 01/16/02 11:18 **Date Received..:** 01/17/02 15:00 **MS Run #.......:** 2018140
Prep Date......: 01/18/02 **Analysis Date..:** 01/18/02
Prep Batch #...: 2018366 **Analysis Time..:** 03:39

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**90**	**(75 - 120)**			**SW846 8260B**
	92	**(75 - 120)**	**2.0**	**(0-25)**	**SW846 8260B**
Chlorobenzene	**96**	**(75 - 120)**			**SW846 8260B**
	98	**(75 - 120)**	**1.6**	**(0-25)**	**SW846 8260B**
1,1-Dichloroethene	**88**	**(70 - 140)**			**SW846 8260B**
	90	**(70 - 140)**	**3.0**	**(0-25)**	**SW846 8260B**
Toluene	**94**	**(75 - 125)**			**SW846 8260B**
	94	**(75 - 125)**	**0.21**	**(0-25)**	**SW846 8260B**
Trichloroethene	**100**	**(70 - 130)**			**SW846 8260B**
	101	**(70 - 130)**	**0.89**	**(0-25)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	105	(75 - 130)
	104	(75 - 130)
1,2-Dichloroethane-d4	114	(65 - 135)
	112	(65 - 135)
Toluene-d8	102	(80 - 130)
	99	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E2A170314 **Work Order #...:** ERW4D1AC-MS **Matrix.........:** WATER
MS Lot-Sample #: E2A180188-002 ERW4D1AD-MSD
Date Sampled...: 01/17/02 10:40 **Date Received..:** 01/18/02 10:40 **MS Run #.......:** 2021137
Prep Date......: 01/19/02 **Analysis Date..:** 01/19/02
Prep Batch #...: 2021371 **Analysis Time..:** 02:58

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**110**	**(75 - 120)**			**SW846 8260B**
	108	**(75 - 120)**	**1.3**	**(0-25)**	**SW846 8260B**
Chlorobenzene	**116**	**(75 - 120)**			**SW846 8260B**
	116	**(75 - 120)**	**0.51**	**(0-25)**	**SW846 8260B**
1,1-Dichloroethene	**108**	**(70 - 140)**			**SW846 8260B**
	106	**(70 - 140)**	**1.8**	**(0-25)**	**SW846 8260B**
Toluene	**113**	**(75 - 125)**			**SW846 8260B**
	122	**(75 - 125)**	**7.8**	**(0-25)**	**SW846 8260B**
Trichloroethene	**118**	**(70 - 130)**			**SW846 8260B**
	118	**(70 - 130)**	**0.25**	**(0-25)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	107	(75 - 130)
	103	(75 - 130)
1,2-Dichloroethane-d4	109	(65 - 135)
	97	(65 - 135)
Toluene-d8	107	(80 - 130)
	111	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: E2A170314 **Work Order #...:** ERV01-SMP ERV01-DUP **Matrix.......:** WATER

Date Sampled...: 01/17/02 08:15 **Date Received..:** 01/17/02 14:55

% Moisture.....: **Dilution Factor:** **Initial Wgt/Vol:**

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH						SD Lot-Sample #: E2A170314-001		
	6.7	6.7	No Units	0.30	(0-0.0)	SW846 9040B	01/17/02	2017465

Analysis Time..: 16:08 MS Run Number..: 2017245

SEVERN TRENT SERVICES

Subcontract Reports

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
7277 Hayvenhurst, Suite B-12, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705

Attention: Diane Suzuki
Project: E2A170314

Sampled: 01/17/02
Received: 01/17/02
Reported: 01/29/02

This laboratory report is confidential and is intended for the sole use of Del Mar Analytical and its client. This entire report was reviewed and approved for release.

CA ELAP Certificate #1197
AZ DHS License #AZ0428

Del Mar Analytical, Irvine
Pat Abe
Project Manager

000057

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A170314

Report Number: ILA0585

Sampled: 01/17/02
Received: 01/17/02

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l				
Sample ID: ILA0585-01 (PTI-MW4-052 - Water)								
Chromium VI	EPA 7199	I2A1766	1.0	**18**	500	1/17/2002	1/17/2002	
Sample ID: ILA0585-02 (PTI-MW35-052 - Water)								
Chromium VI	EPA 7199	I2A1766	1.0	**18**	500	1/17/2002	1/17/2002	
Sample ID: ILA0585-03 (PTI-MW16-052 - Water)								
Chromium VI	EPA 7199	I2A1766	0.0040	**0.096**	2	1/17/2002	1/17/2002	
Sample ID: ILA0585-04 (PTI-MW9-052 - Water)								
Chromium VI	EPA 7199	I2A1766	0.040	**0.28**	20	1/17/2002	1/17/2002	
Sample ID: ILA0585-05 (PTI-MW37-052 - Water)								
Chromium VI	EPA 7199	I2A1766	0.040	**0.23**	20	1/17/2002	1/17/2002	
Sample ID: ILA0585-06 (PTI-MW7-052 - Water)								
Chromium VI	EPA 7199	I2A1766	0.0020	ND	1	1/17/2002	1/17/2002	
Sample ID: ILA0585-07 (PTI-MW11-052 - Water)								
Chromium VI	EPA 7199	I2A1766	0.0020	ND	1	1/17/2002	1/17/2002	
Sample ID: ILA0585-08 (PTI-EB03-052 - Water)								
Chromium VI	EPA 7199	I2A1766	0.0020	ND	1	1/17/2002	1/17/2002	

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Del Mar Analytical

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A170314

Report Number: ILA0585

Sampled: 01/17/02
Received: 01/17/02

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I2A1766 Extracted: 01/17/02										
Blank Analyzed: 01/17/02 (I2A1766-BLK1)										
Chromium VI	ND	0.0020	mg/l							
LCS Analyzed: 01/17/02 (I2A1766-BS1)										
Chromium VI	0.0502	0.0020	mg/l	0.0500		100	90-110			
Matrix Spike Analyzed: 01/17/02 (I2A1766-MS1)				**Source: ILA0585-06**						
Chromium VI	0.0515	0.0020	mg/l	0.0500	ND	101	70-130			
Matrix Spike Dup Analyzed: 01/17/02 (I2A1766-MSD1)				**Source: ILA0585-06**						
Chromium VI	0.0530	0.0020	mg/l	0.0500	ND	104	70-130	3	15	

Del Mar Analytical, Irvine
Pat Abe
Project Manager

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Del Mar Analytical
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E2A170314

Report Number: ILA0585

Sampled: 01/17/02
Received: 01/17/02

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

NR Not reported.

RPD Relative Percent Difference

Del Mar Analytical, Irvine
Pat Abe
Project Manager

000060

[redacted]

Chain of Custody Record

~~[illegible]~~ Del Mar

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client: STL LOS ANGELES, 1721 S. GRAND AVE.		Project Manager: Diane Suzuki		Date: 01/17/02	Chain of Custody Number: 050256	
Address: SANTA ANA, CA 92705, 714-258-8610		Telephone Number (Area Code)/Fax Number: (714) 258-8610 Ext 319		Lab Number: ~~E2A~~ 170314	Page 1 of 1	
City	State	Zip Code	Site Contact: —	Lab Contact: —		
Project Name and Location (State)			Carrier/Waybill Number			
Contract/Purchase Order/Quote No.						

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH	Cr+6 (7196)
PTI-MW4-052	01/17/02	0815		X									X
PTI-MW35-052		0715											
PTI-MW16-052		0925											
PTI-MW9-052		1010											
PTI-MW37-052		1205											
PTI-MW7-052		1230											
PTI-MW11-052		1330											
PTI-EB03-052		1400											X

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other normal

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	01/17/02	1805	1. Received By: [signature]	01/17/02	1805
2. Relinquished By: [signature]	01/17/02	1805	2. Received By		
3. Relinquished By			3. Received By: [signature]	1/17/02	18:05

Comments: intact 3°C.

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Appendix D
Completed COC Forms

000002

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (0700)

Client	Project Manager	Date	Chain of Custody Number
CDM	Sharon Wallin	1/15/02	050073

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
	949 752 5452	E2A 150281	Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
Irvine			John Bennett	

Project Name and Location (State)	Carrier/Waybill Number
Phibrotech	

Contract/Purchase Order/Quote No.

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		8260	Cr(VI)	pH	Cr-Cu-Cd	Special Instructions/ Conditions of Receipt
PTI-EB01-052	1/15/02	14:00		X				X									X		
" "												X				X			
~~ ~~											~~X~~				~~X~~				
										X								X	
PTI-MW1D-052	1/15/02	14:05									X				X				
												X				X			
								X									X		
										X								X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: J. Bennett	1/15/02	16:00	1. Received By: P. Bautista	1-15-02	1600
2. Relinquished By: P. Bautista	1-15-02		2. Received By: Terry Swart	1-15-02	1640
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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C H A N G E O R D E R

Client	Date of Order	Page
CDM	1-16-02	1 of 1

Project Name	Client Reference #	C.O. #
PTI 1st Quarter Sampling 2002	2279-11643.FLD.FIEL	

Project Address: Dice Rd Santa Fe Spring

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 48-96 Hours
- ☒ Normal

Project Contact (please print): Rob Lopez / John Bernet

NOTE: Indicate additional analysis request by denoting an "A" in the appropriate box. Indicate deletion of analysis by denoting a "D" in the appropriate box.

Analysis Requested

Sample ID	Sample Location	Date	Time	Physical State: Solid (S), Liquid (L), Vapor (V)	EPA 8260 VOCs	Cr Cu Cd	Cr +6	pH						Container/Comments	Lab Sample Number
PTI-MW01S-052		1-15-02	16:30	L	X									3-40ml VOA	HCl
↓		↓	↓	↓		X								filtered in field ~~250~~ 500 ml poly	HNO_3
↓		↓	↓	↓			X							200 ml poly	NaOH
↓		↓	↓	↓				X						125ml	None
trip blank		—	—	↓	X										
temp blank		—	—	↓											

Changes Authorized by (signature)	Received by (signature)	Date
[signature]	Matt Crassfield	1-16-02
Company	**Company**	**Time**
CDM	@G.C. [signature] 1.16.02 11:45 AM	10:45

Special Instructions

TERRA TECH LABS

Corporate Office
1920 E. Deere Ave., Suite 130
Santa Ana, CA 92705
Tel 714.757.7022 800.377.2322
Fax 714.757.7274

Arizona Office
3902 E. University Drive, Suite 4
Phoenix, Arizona 85034
Tel 602.437.9367 Fax 602.437.9362

200000

[redacted]

Chain of Custody Record

STL-4124 (0700)

29756

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

Client	Project Manager	Date	Chain of Custody Number
CDM	SHARON WALLIN	1/16/02	050085

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
	949 752 5452	E2A160336	Page 1 of 3

City	State	Zip Code	Site Contact	Lab Contact
IRVINE			JOHN BENNETT	

Project Name and Location (State)	Carrier/Waybill Number
PTM BROTECH	

Contract/Purchase Order/Quote No.

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	pH	Cr/Cu-Cd	8260	Cr(VI)
PTI-MW3-052	1/16/02	08:25		X			X						X			
									X					X		
										X					X	
											X					X
PTI-MW15D-052		09:45					X						X			
									X					X		
										X					X	
											X					X
PTI-MW15S-052		10:45					X						X			
									X					X		
										X					X	
											X					X

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other________ STANDARD TAT

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By (signature) (CDM)	1-16-02	16:10	1. Received By Matt Crossfield	1-16-02	16:18
2. Relinquished By Matt Crossfield	1-16-02	17:00	2. Received By (signature)	1/16/02	17:00
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

000002

Chain of Custody Record

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client: CDM	Project Manager	Date: 1/16/02	Chain of Custody Number: 053625
Address	Telephone Number (Area Code)/Fax Number	Lab Number: E2A 160336	Page 2 of 3
City / State / Zip Code	Site Contact / Lab Contact		
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH	pH	Cr-Cd-Cu	8260	Cr(VI)	Special Instructions/ Conditions of Receipt
PTI-MW6D-052	1/16/02	12:50		X			X						X				
									X					X			
										X					X		
											X					X	
PTI-MW6B-052	1/16/02	13:55					X						X				
									X					X			
										X					X		
											X					X	
PTI-MW14S		14:50					X						X				
									X					X			
										X					X		
											X					X	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other______

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature] (CDM)	1-16-02	16:10	1. Received By: Matt Cressfield	1-16-02	16:10
2. Relinquished By: Matt Cressfield	1-16-02	17:00	2. Received By: Brook	1/16/02	17:00
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client	Project Manager	Date	Chain of Custody Number
CDM		1/16/02	053626
Address	Telephone Number (Area Code)/Fax Number	Lab Number E2A160336	Page 3 of 3

City	State	Zip Code	Site Contact	Lab Contact

Project Name and Location (State):

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	pH	Cr-Cu-Cd	8260	Cr(VI)
PTI-MW4A-052	1/16/01	15:55		X			X						X			
									X					X		
										X					X	
											X					X
PTI-~~MW~~ EB02-052		1505					X						X			
									X					X		
										X					X	
											X					X
PTI-DI01-052		15:40					X						X			
									X					X		
										X					X	
											X					X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other______

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By [signature] (CDM)	1-16-02	16:10	1. Received By Matt [signature]	1-16-02	16:10
2. Relinquished By Matt [signature]	1-16-02	17:00	2. Received By [signature]	1/16/02	17:00
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

000004

Chain of Custody Record

SEVERN TRENT SERVICES **Severn Trent Laboratories, Inc.**

STL-4124 (0700)

Client: CDM	Project Manager: SHARON WALLIN	Date: 1/17/02	Chain of Custody Number: 053628
Address:	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 1 of 3
City: IRVINE State: Zip Code:	Site Contact: JOHN BENNETT Lab Contact:	Analysis (Attach list if more space is needed)	
Project Name and Location (State): PIMBROTECH	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	PH	Cr-Cu-Al	8260	Cr(VI)	Special Instructions/ Conditions of Receipt
PTI-MW4-052	1/17/02	08:15		X			X						X				
↓	↓	↓		↓					X					X			
										X					X		
											X					X	
PTI-MW35-052	1/17/02	07:15 ~~08:15~~		X			X						X				
↓	↓	↓		↓					X					X			
										X					X		
											X					X	
PTI-MW16-052	↓	09:25		↓			X						X				
↓									X					X			
										X					X		
											X					X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other______ STANDARD TAT

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	1/17/02	14:15	1. Received By: [signature]	1-17-02	14:15
2. Relinquished By:			2. Received By: [signature]	1/17/02	14:55
3. Relinquished By:			3. Received By:		

Comments:

DISTRIBUTION: *WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy*

200000

Chain of Custody Record

SEVERN TRENT SERVICES Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client: CPM	Project Manager:	Date: 1/17/02	Chain of Custody Number: 053627
Address:	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 2 of 3
City: State: Zip Code:	Site Contact: Lab Contact:	Analysis (Attach list if more space is needed)	
Project Name and Location (State):	Carrier/Waybill Number:		Special Instructions/ Conditions of Receipt
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/ NaOH	pH	Cr-Cu-Cd	8260	Cr(VI)	Special Instructions/ Conditions of Receipt
PTI-MW9-052	1/17/02	10:10		X			X						X				
									X					X			
										X					X		
											X					X	
PTI-MW37-052		12:05 ~~10:10~~					X						X				
									X					X			
										X					X		
											X					X	
PTI-MW7-052							X						X				
									X					X			
										X					X		
											X					X	

000003

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other______

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	1/17/02	14:15	1. Received By: [signature]	1-17-02	14:15
2. Relinquished By:			2. Received By: [signature]	1/17/02	16:55
3. Relinquished By:			3. Received By:		

Comments:

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (0700)

Client: CDM	Project Manager:	Date: 1/17/02	Chain of Custody Number: 053629
Address:	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 3 of 3
City: / State: / Zip Code:	Site Contact: / Lab Contact:	Analysis (Attach list if more space is needed)	
Project Name and Location (State):	Carrier/Waybill Number:		Special Instructions/ Conditions of Receipt
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/ NaOH		pH	Cr-Cu-Cd	8260	Cr(VI)	Special Instructions/ Conditions of Receipt
PTI-MW11-052	1/17/02	13:30		X				X							X				
										X						X			
											X						X		
												X						X	
PTI-EB03-052		14:00		X				X							X				
										X						X			
											X						X		
												X						X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other________

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	1/17/02	14:15	1. Received By: [signature]	1-17-02	14:15
2. Relinquished By:			2. Received By: [signature]	1/17/02	14:55
3. Relinquished By:			3. Received By:		

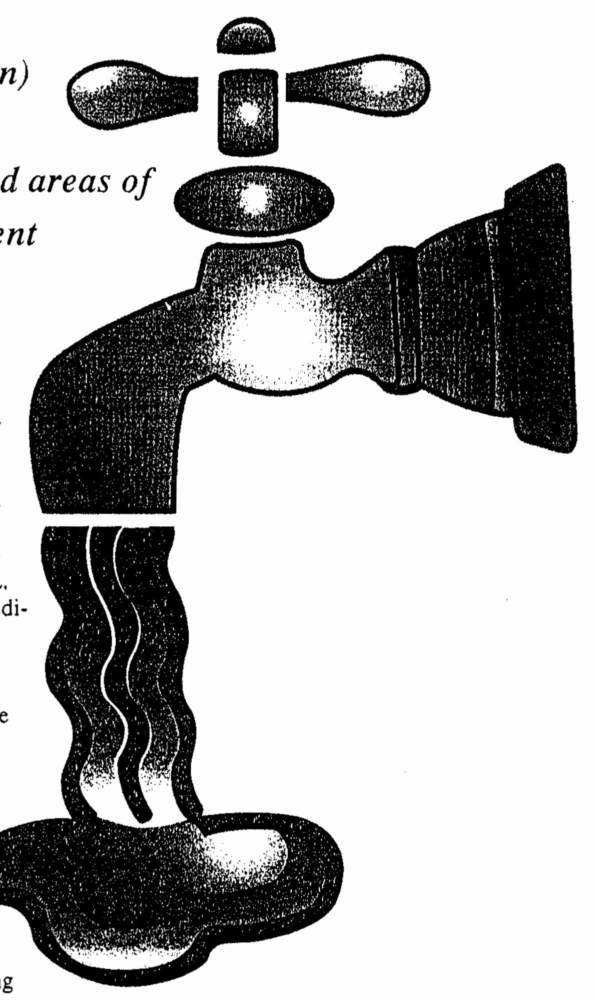
Comments:

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Appendix E
Background Groundwater Concentrations

1999 Water Quality Report

This Annual Report is prepared by Central Basin Municipal Water District (Central Basin) as a service to the City of Santa Fe Springs. Central Basin provides imported surface water from the Metropolitan Water District of Southern California to 26 cities and unincorporated areas of Los Angeles County. Central Basin contributes to improving groundwater basin management through water quality, conservation and education programs.



Q Where does my drinking water come from?

A Your tap water comes from one or two major sources: groundwater and surface water. Your system pumps groundwater from one or more deep wells located predominately withing its service area. Your system may also use Metropolitan Water District of Southern California's imported surface water from the Colorado River and the State Water Project in Northern California. The quality of your system's groundwater is presented in this report. If your system used imported surface water in 1999, its quality is also described.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants, including viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems;
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

To ensure quality tap water, USEPA and the California Department of Health Services (CDHS) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Q Why do I see so much news coverage about the quality of tap water?

A All drinking water, including bottles water, may reasonably be expected to contain at least small amounts of some contaminants. As water travels over the surface of the land or through the ground, it can pick up substances resulting from the presence of animals or from human activity. The presence of contaminants does not necessarily indicate that water poses a health rick. More information about contaminants and potential health effects can be obtained by calling the federal Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Q How is my drinking water tested?

A Your drinking water is protected from unsafe levels of chemicals and bacteria by regularly scheduled testing.Drinking water wells are tested weekly, monthly, quarterly, annually, or up to once every five years depending on the type of chemical, the vulnerability of the well to nearby potential sources of contamination, and historic water quality information. Wells that may have the potential to be contaminated are tested more frequently. Testing intervals are set by the California Department of Health Services.

Central Basing Municipal Water District administers the testing program for your water supplier's wells. A state-certified laboratory collects and tests well samples. The Metropolitan Water District extensively tests the quality of imported surface water separately. Your water supplier also tests its distribution system for bacteria, color, odor, appearance and disinfection by-products, and for lead and copper at selected customer's taps. Water quality testing is performed by state-certified laboratories and trained specialists.

Q What are drinking water standards?

A The federal Environmental Protection Agency sets regulations, or standards, that limit the amount of certain contaminants in tap water. In California, the Department of Health Services regulates tap water quality by enforcing standards that are at least as stringent as federal EPA standards.Historically, California standards are more stringent than the federal counterparts.

There are two types of standards. Primary standards protect you from chemicals that could potentially affect your health, such as toxic metals, pesticides, industrial solvents, and radioactive constituents.Secondary standards regulate chemicals that affect the aesthetic qualities of water, such as taste, odor and appearance. Regulations set a Maximum Contaminant Level (MCL) for each of the primary and secondary standards. The MCL is the highest level of a contaminant that is allowed in drinking water. Water suppliers must ensure water quality by complying with MCLs. Not all chemicals are regulated with MCLs. Lead and copper, for instance, are regulated by an Action Level. If either chemical exceeds its action level, a treatment process is required to reduce the levels in drinking water.

Public Health Goals (PHGs) are set by the California Environmental Protection Agency. PHGs provide more information on the quality of drinking water to customers, and are similar to their federal counterparts, Maximum Contaminant Level Goals (MCLGs). PHGs and MCLGs are levels that are of an advisory nature only.

Q How do I read the Water Quality Report?

A The first column of the water quality table lists chemicals detected in your water. The next column list the average concentration and range of concentrations found in your drinking water.

Following this are columns that list the MCL and PHG or MCLG, if appropriate. The last column describes the likely sources of contaminants in drinking water.

To review the quality of your drinking water, compare the highest concentration and MCL. Check for chemicals greater than MCL. Exceedence of a primary MCL does not usually constitute an immediate health threat. Rather, it requires the supplier to test the suspect well intensely for a short duration to confirm the initial finding. Confirming test results are averaged and, if greater than the MCL, the well must be treated to remove the chemical, or the well must be removed from service.

Q Should I take additional precautions?

A Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The Environmental Protection Agency/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection of Cryptosporidium and other microbial contaminants are available from the federal EPA's Safe Drinking Water Hotline (1-800-426-4791).

Q How can I participate in decisions on water issues that affect me?

A In the City of Santa Fe Springs, the public is welcome to attend City Council meetings on the second and fourth Thursday of each month at 7:00 p.m.

For More Information:

If you have specific questions about your system's drinking water quality, please contact:Ron Hughes at (562) 868-0511

Esto es una informacion importante.Por favor, si lo pueden traducir.

Results are from the most recent testing performed in accordance with state and federal drinking water regulations.

PRIMARY STANDARDS MANDATED FOR PUBLIC HEALTH	GROUNDWATER AVERAGE	GROUNDWATER RANGE	SURFACE WATER %<0.5	SURFACE WATER RANGE	PRIMARY MCL	MCLG or PHG	MAJOR SOURCES IN DRINKING WATER
CLARITY							
TURBIDITY (ntu) (a)	0.4	0.1-39	100%	0.09-0.1	TT	-	Soil runoff
MICROBIOLOGICAL (% POSITIVE)	AVERAGE	RANGE	AVERAGE	RANGE			
TOTAL COLIFORM BACTERIA (a)	0%	0%	0.04%	0-0.2%	5	0	Naturally present in the environment
FECAL COLIFORM BACTERIA (a)	0%	0%	0%	0%	0	0	Human and animal fecal waste
NO. OF ACUTE VIOLATIONS	0	0	0	0			
ORGANIC CHEMICALS (µg/l)							
TRICHLOROETHYLENE - TCE	1.2	ND-3.4	ND	ND	5	0	Discharge from metal degreasing sites and other factories
TRIHALOMETHANES, TOTAL-TTHMS (a) (b)	2	27-45	37	24-51	100	0	By-product of drinking water chorination
INORGANICS Date Sampled (e)							
ARSENIC (µg/l) 1998-1999	4	ND-7	2	ND-3	50	-	Erosion of natural deposits, glass and electronics production wastes
COPPER (mg/l) 30 sites in 1998	0.34 (c)	ND-0.68	ND (c)	ND	1.3 AL	0.17 (d)	Corrosion of household plumbing
FLUORIDE (mg/l) 1998-1999	0.29	0.27-0.31	0.26	0.22-0.32	2	1 (d)	Erosion of natural deposits, water additive that promotes strong teeth
LEAD (µg/l) 30 sites in 1998	ND (c)	ND	ND (c)	ND	15 AL	2 (d)	Corrosion of household plumbing
NITRATE (mg/l as N) 1999	0.9	ND-1.8	ND	ND	10	10 (d)	Leaking from septic tanks and sewage; erosion of natural deposits
ALUMINUM (mg/l) 1998-1999	ND	ND	0.15	0.09-0.25	1	-	Erosion of natural deposits, surface water treatment process residue
RADIOLOGICAL - pCi/l Analyzed 4 consecutive quarters every 4 years (results are from 1996 to 1999)							
GROSS ALPHA (h)	1.9	ND-6.6	4.9	2.4-8.1	15 (h)	0	Erosion of natural deposits
GROSS BETA	NA	NA	6.7	6.1-10.6	50 (h)	0	Decay of natural and man-made deposits
URANIUM	5.3	4.5-6.0	3.3	ND-4.8	20 (h)	0	Erosion of natural deposits

SECONDARY STANDARDS FOR AESTHETIC PURPOSES	GROUNDWATER AVERAGE	GROUNDWATER RANGE	SURFACE WATER AVERAGE	SURFACE WATER RANGE	PRIMARY MCL	MCLG or PHG	MAJOR SOURCES IN DRINKING WATER
CHLORIDE (mg/l)	50	34-66	71	65-78	500	-	Erosion of natural deposits, seawater influence
UNITS OF COLOR (a)	3	ND-10	2	1-2	15	-	Naturally-occurring oragnic materials
THRESHOLD ODOR NO. (ton) (a)	1	1-2	(f)	(f)	3	-	Naturally-occurring oragnic materials
CONDUCTIVITY (umhos/cm)	655	470-840	835	781-938	1600	-	Seawater influence, disolved minerals
SULFATE (mg/l)	112	54-170	195	175-234	500	-	Erosion of natural deposits
TOTAL DISSOLVED SOLIDS (mg/l)	399	262-535	514	478-588	1000	-	Erosion of natural deposits
MANGANESE (µg/l)	13	ND-26	ND	ND	50	-	Erosion of natural deposits

ADDITIONAL CONSTITUENTS OF INTEREST	GROUNDWATER AVERAGE	GROUNDWATER RANGE	SURFACE WATER AVERAGE	SURFACE WATER RANGE
pH (std unit)	7.8	7.6-8.0	8.1	8.0-8.1
TOTAL HARDNESS (mg/l)	221	105-337	250	228-289
CALCIUM (mg/l)	67	34-99	62	56-73
MAGNESIUM (mg/l)	13	5-22	24	22-27
SODIUM (mg/l)	60	53-67	77	70-87
POTASSIUM (mg/l)	2.9	2.2-3.6	3.8	3.6-4.1
PERCHLORATE (µg/l) (i)	ND	ND	ND	ND-6
HALOACETIC ACIDS (µg/l)	NA	NA	28	9.5-31
HALOACETONITRILES (µg/l)	NA	NA	7.7	4.8-12
CHLOROPICRIN (µg/l)	NA	NA	0.1	ND-0.4
HALOKETONES (µg/l)	NA	NA	1.7	1-3.2
CHLORAL HYDRATE (µg/l)	NA	NA	4.0	1.5-6.8
TOTAL ORGANIC HALOGENS (TOX) (µg/l)	NA	NA	15	72-174
CYANOGEN CHLORIDE (µg/l)	NA	NA	1.9	ND-3.1
RADON (pCi/l)	228	171-318	ND	ND-141

FOOTNOTES

(a) Compliance samples collected from points in the distribution system.
(b) Average and range calculated by running average.
(c) 90th percentile from the most recent sampling at selected customer taps.
(d) California Public Health Goal (PHG). Other advisory levels listed in this column are federal Maximum Contaminant Level Goals (MCLGs).
(e) Indicates dates sampled for groundwater sources only.
(f) Metropolitan Water District of Southern California uses a flavor-profile test that more accurately detects odors.
(g) Gross alpha standard also includes Radium-226 standard.
(h) MCL compliance based on 4 consecutive quarters of sampling. MCL standard is for combined Radium 226 plus 228.
(i) The California Department of Health Services set an Action Level of 18 µg/l in May 1997 and is evaluating perchlorate as a state primary drinking water standard. Health effects to date show that perchlorate affects the thyroid gland.

SPECIAL NOTE ON RADON: Radon is a radioactive gas that you cannot taste, see or smell, and is a known human carcinogen. It is found throughout the country. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering and other household activities. Radon entering the home through tap water is a small source compared to radon entering the home through soil. Tap water contributes less than 5% of the total amount of radon in indoor air. If you are concerned about radon in your home, an easy and inexpensive test can show you how much radon is in your home's indoor air. There are simple and inexpensive ways to fix your home if the level of radon in the air is 4 picoCuries per liter (pCi/L) of air or higher. For additional information, call your State radon program or call EPA's Radon Hotline (800-SOS-RADON).

TERMS:

Maximum Contaminant Level (MCL): The highest level of a contaminent that is allowed in drinking water. Primary MCLs are set as close to the PHGs (MCLGs) as is economically and technology feasible. Secondary MCLs are set to protect the odor, taste and appearance of dmking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminent in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Public Health Goal or PHG: The level of a contaminent in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Primary Drinking Water Standard or PDWS: MCLs for contaminents that affect health along with their monitoring and reporting requirements, and water treatment requirements.

mg/l = milligrams per liter (parts per million)
µg/l = micrograms per liter (parts per billion)
pCi/l = picoCuries per liter
umhos/cm = micromhos per centimeter
ND = constituent not detected at the reporting limit
NA = constituent not analyzed
< = constituent not detected in any samples at the reporting limit

Appendix F
Statistical Analysis

Appendix F-1
Calculation of Upper Tolerance Limits for Background

SUMMARY OF UPPER TOLERANCE LEVEL CALCULATIONS

Quarterly Background Data: January 1989 to January 2002

Southern California Chemical

POISSON DISTRIBUTED UPPER TOLERANCE LEVEL

COMPOUND	Hexa Chromium	Total Chromium	Cadmium	Copper	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Trichloroethene
Percent Detected	3.9%	7.8%	2.0%	21.6%	2.0%	7.8%	25.5%	27.5%	NOT
Sample number(n)	51	51	51	51	51	51	51	51	CALC.
Tn	0.5912	0.4311	0.1409	0.7368	17.1550	29.6050	44.2050	77.4550	
2Tn+2	3.18	2.86	2.28	3.47	36.31	61.21	90.41	156.91	
Chi Squared @95% of dis	7.81	5.99	5.99	7.81	51.00	80.23	113.15	186.15	
lamda Tn	0.244	0.168	0.134	0.266	18.154	48.147	100.289	286.354	
Two time Lamda Tn	0.488	0.336	0.268	0.532	36.309	96.294	200.578	572.708	
Beta cov. @95%, deg fr.	4	3	3	4	51	121	236	630	
k, from 2k+2 deg fr.	1.00	0.50	0.50	1.00	24.50	59.50	117.00	314.00	

AITCHISON ADJUSTMENT AND CALCULATION OF UPPER TOLERANCE LEVELS

Number of ND(d)	NOT	47	NOT	40	NOT	47	38	37	NO ADJ. REQ.
Number of values(n)	CALC.	51	CALC.	51	CALC.	51	51	51	
Mean of det values		0.0475		0.029		1.650	1.977	4.050	
STD of det values		0.041		0.010		0.420	0.738	1.435	
Atch. Adj. mean/mean(1)		0.004		0.006		0.129	0.504	1.112	11.798
Atch. Adj. std./std. (1)		0.016		0.013		0.460	0.942	1.966	5.068
K for Tolerance Limit		2.353		1.812		2.353	1.782	1.771	1.676
Adjusted Tol. Limit		0.042		0.029		1.211	2.183	4.594	
Unadjusted Tol. Limit									20.291

(1) Unadjusted mean and std. used to compute upper tolerance level for TCE

Appendix F-2
Nonparametric Kruskal-Wallis Mann-Whitney U Test Results

IMPORT successfully completed.

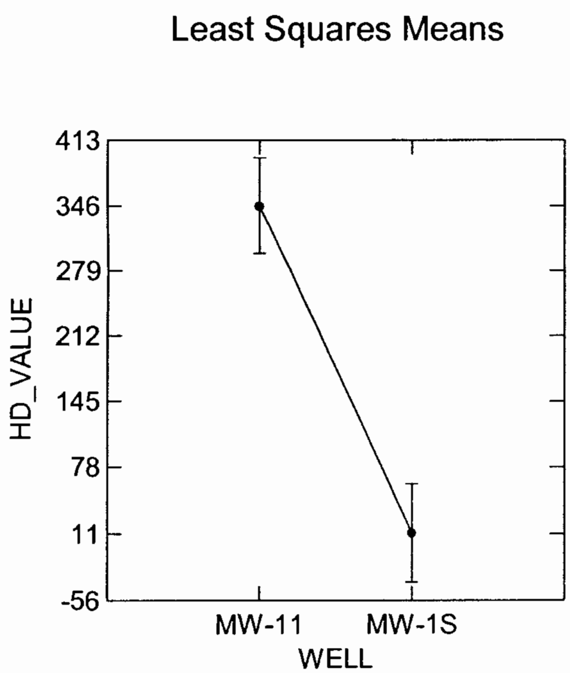
916 cases and 6 variables processed and saved.

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-11.SYD,
created Sat Mar 16, 2002 at 02:38:21, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

```
Data for the following results were selected according to:
      (PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-11, MW-1S

Dep Var: HD_VALUE   N: 102   Multiple R: 0.433   Squared multiple R: 0.187

Analysis of Variance
```

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	2843024.940	1	2843024.940	23.062	(
Error	1.23275E+07	100	123275.126		



*** WARNING ***

```
Case          837 is an outlier       (Studentized Residual =      10.777)
Case          855 is an outlier       (Studentized Residual =       4.209)
Case          893 is an outlier       (Studentized Residual =       3.502)

Durbin-Watson D Statistic          1.746
First Order Autocorrelation        0.122
COL/
ROW WELL$
  1  MW-11
  2  MW-1S
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 123275.126 with 100 df.
```

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	-333.903	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

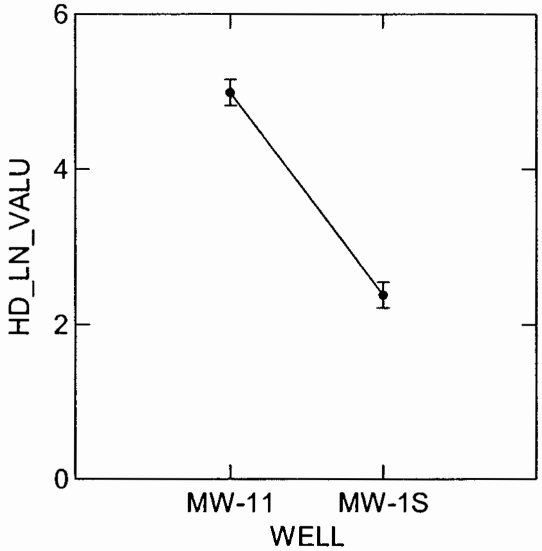
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Dep Var: HD_LN_VALU   N: 102   Multiple R: 0.741   Squared multiple R: 0.550

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	173.491	1	173.491	122.070	(
Error	142.124	100	1.421		

Least Squares Means




```
*** WARNING ***
Case          121 is an outlier        (Studentized Residual =        -5.465)
Case          122 is an outlier        (Studentized Residual =        -5.465)

Durbin-Watson D Statistic          1.114
First Order Autocorrelation        0.329
COL/
ROW WELL$
  1  MW-11
  2  MW-1S
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 1.421 with 100 df.
```

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	-2.608	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

IMPORT successfully completed.

845 cases and 6 variables processed and saved.

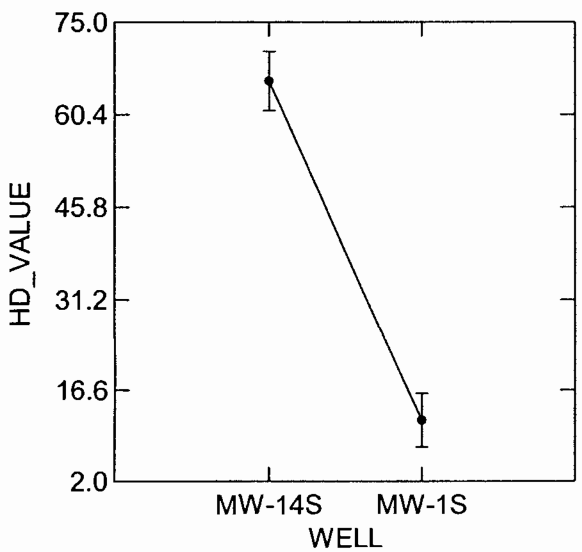
SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-14s.SYD,
created Sat Mar 16, 2002 at 02:38:23, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

```
Data for the following results were selected according to:
      (PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-14S, MW-1S

Dep Var: HD_VALUE   N: 94   Multiple R: 0.662   Squared multiple R: 0.439

Analysis of Variance
```

Source	Sum-of-Squares	df	Mean-Square	F-ratio
WELL$	67814.003	1	67814.003	71.920
Error	86747.238	92	942.905	

Least Squares Means




```
*** WARNING ***
Case          102 is an outlier        (Studentized Residual =        4.073)
Case          711 is an outlier        (Studentized Residual =        4.073)
Case          765 is an outlier        (Studentized Residual =        3.661)
Case          822 is an outlier        (Studentized Residual =        3.661)

Durbin-Watson D Statistic          1.607
First Order Autocorrelation        0.178
COL/
```

ROW WELL$
  1 MW-14S
  2 MW-1S
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 942.905 with 92 df.

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	-53.914	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1. 000	
2	0. 000	1. 000

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

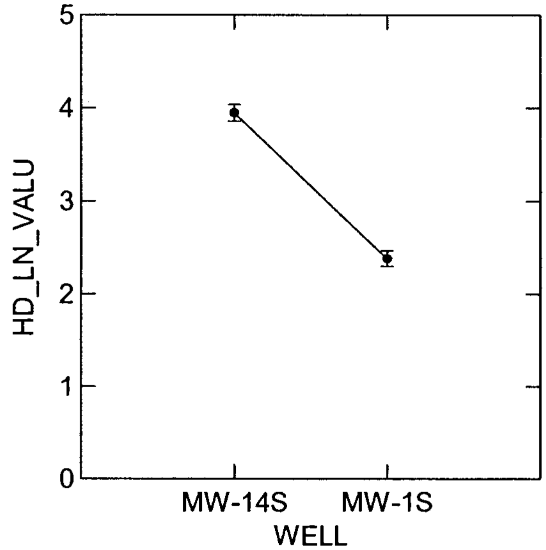
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Dep Var: HD_LN_VALU   N: 94   Multiple R: 0.799   Squared multiple R: 0.639

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	57.427	1	57.427	162.648	(
Error	32.483	92	0.353		

Least Squares Means




```
Durbin-Watson D Statistic          1.515
First Order Autocorrelation        0.214
COL/
ROW WELL$
  1  MW-14S
  2  MW-1S
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.353 with 92 df.
```

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	-1.569	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

IMPORT successfully completed.

854 cases and 6 variables processed and saved.

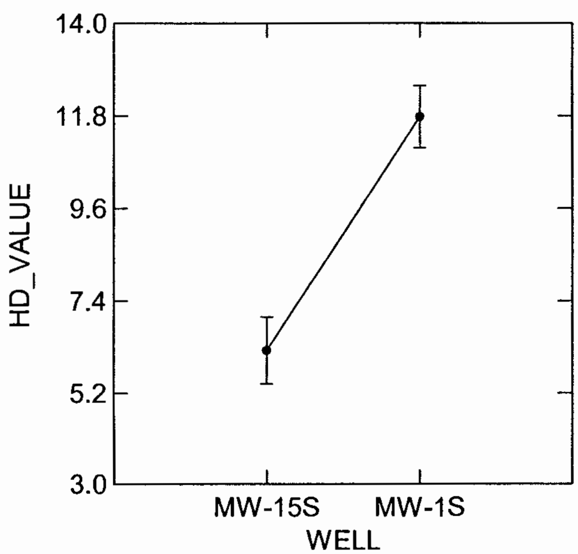
SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-15s.SYD,
created Sat Mar 16, 2002 at 02:38:24, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

```
Data for the following results were selected according to:
      (PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-15S, MW-1S

Dep Var: HD_VALUE   N: 95   Multiple R: 0.468   Squared multiple R: 0.219

Analysis of Variance
```

Source	Sum-of-Squares	df	Mean-Square	F-ratio	
WELL$	730.968	1	730.968	26.059	(
Error	2608.680	93	28.050		

Least Squares Means




```
*** WARNING ***
Case          102 is an outlier        (Studentized Residual =        4.586)

Durbin-Watson D Statistic         0.990
First Order Autocorrelation       0.497
COL/
ROW WELL$
  1  MW-15S
  2  MW-1S
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 28.050 with 93 df.
```

Matrix of pairwise mean differences:

	1	2
1	0. 000	
2	5. 563	0. 000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1. 000	
2	0. 000	1. 000

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

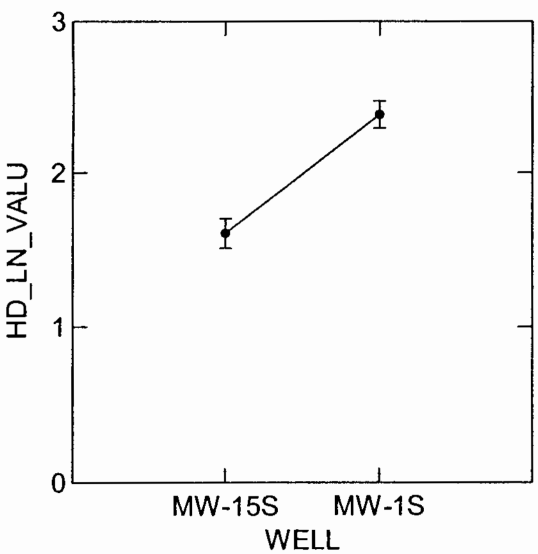
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Dep Var: HD_LN_VALU N: 95 Multiple R: 0.522 Squared multiple R: 0.273

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	14.353	1	14.353	34.843	(
Error	38.310	93	0.412		

Least Squares Means



```
*** WARNING ***
Case           86 is an outlier        (Studentized Residual =        -3.880)

Durbin-Watson D Statistic         0.950
First Order Autocorrelation       0.451
COL/
ROW WELL$
  1  MW-15S
  2  MW-1S
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.412 with 93 df.

Matrix of pairwise mean differences:
```

	1	2
1	0.000	
2	0.780	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

IMPORT successfully completed.

799 cases and 6 variables processed and saved.

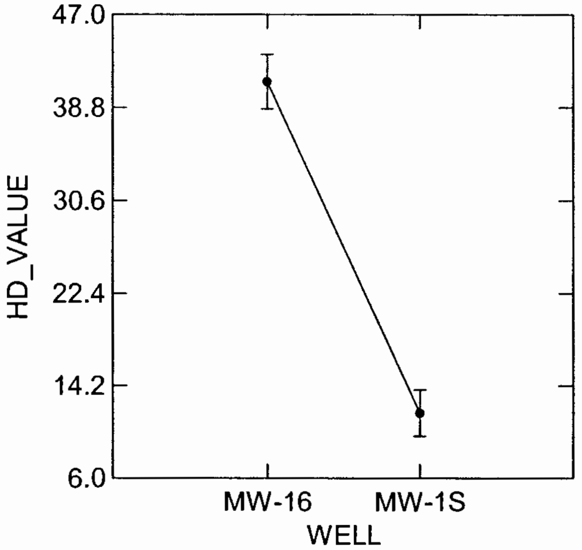
SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-16.SYD,
created Sat Mar 16, 2002 at 02:38:25, contains variables:

WELL$ PARAM_ID$ VALUE LN_VALUE HD_VALUE HD_LN_VALU

```
Data for the following results were selected according to:
      (PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-16, MW-1S

Dep Var: HD_VALUE   N: 89   Multiple R: 0.705   Squared multiple R: 0.497

Analysis of Variance
```

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	18688.265	1	18688.265	86.021	(
Error	18900.931	87	217.252		

Least Squares Means




```
*** WARNING ***
Case           66 is an outlier        (Studentized Residual =        3.670)
Case          439 is an outlier        (Studentized Residual =        5.470)

Durbin-Watson D Statistic          1.366
First Order Autocorrelation        0.299
COL/
ROW WELL$
  1  MW-16
  2  MW-1S
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 217.252 with 87 df.

Matrix of pairwise mean differences:
```

	1	2
1	0.000	
2	-29.296	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

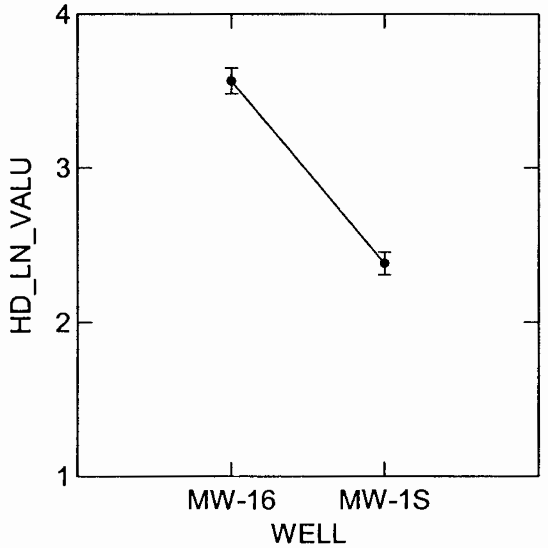
Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

```
Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-16, MW-1S

Dep Var: HD_LN_VALU   N: 89   Multiple R: 0.752   Squared multiple R: 0.566

Analysis of Variance
```

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	30.465	1	30.465	113.280	(
Error	23.397	87	0.269		

Least Squares Means




```
*** WARNING ***
Case           757 is an outlier        (Studentized Residual =       -3.378)

Durbin-Watson D Statistic          1.191
First Order Autocorrelation        0.385
COL/
ROW WELL$
  1   MW-16
  2   MW-1S
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.269 with 87 df.

Matrix of pairwise mean differences:
```

	1	2
1	0.0 00	
2	- 1.183	0.0 00

```
Tukey HSD Multiple Comparisons.
```

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

IMPORT successfully completed.

917 cases and 6 variables processed and saved.

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-3.SYD,
created Sat Mar 16, 2002 at 02:38:27, contains variables:

WELL$ PARAM_ID$ VALUE LN_VALUE HD_VALUE HD_LN_VALU

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

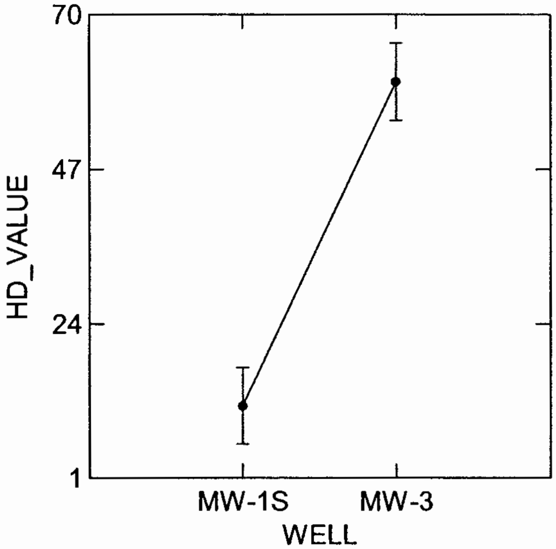
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Dep Var: HD_VALUE N: 102 Multiple R: 0.512 Squared multiple R: 0.262

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	59319.765	1	59319.765	35.522	(
Error	166995.970	100	1669.960		

Least Squares Means




```
*** WARNING ***
Case          893 is an outlier        (Studentized Residual =        6.874)
Case          910 is an outlier        (Studentized Residual =        4.283)

Durbin-Watson D Statistic          1.696
First Order Autocorrelation        0.152
COL/
ROW WELL$
  1  MW-1S
  2  MW-3
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 1669.960 with 100 df.

Matrix of pairwise mean differences:
```

	1	2
1	0.0 00	
2	48. 231	0.0 00

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1. 000	
2	0. 000	1. 000

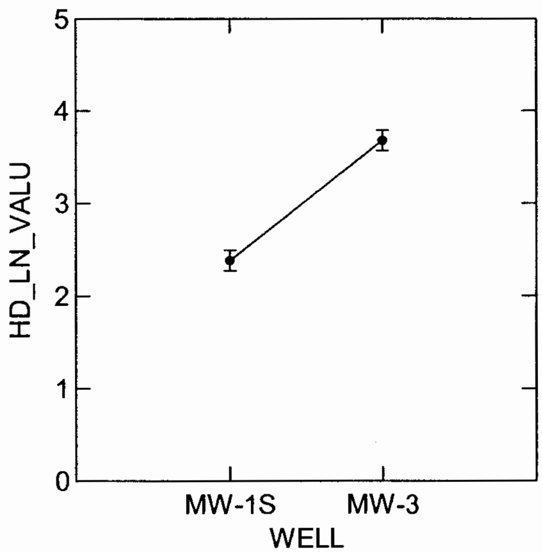
Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

```
Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-1S, MW-3

Dep Var: HD_LN_VALU   N: 102   Multiple R: 0.639   Squared multiple R: 0.408

Analysis of Variance
```

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	42.831	1	42.831	69.001	(
Error	62.073	100	0.621		

Least Squares Means




```
*** WARNING ***
Case          838 is an outlier       (Studentized Residual =       -4.913)

Durbin-Watson D Statistic          1.734
First Order Autocorrelation        0.128
COL/
ROW WELL$
  1  MW-1S
  2  MW-3
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.621 with 100 df.

Matrix of pairwise mean differences:
```

	1	2
1	0.000	
2	1.296	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

IMPORT successfully completed.

934 cases and 6 variables processed and saved.

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-4.SYD,
created Sat Mar 16, 2002 at 02:38:28, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

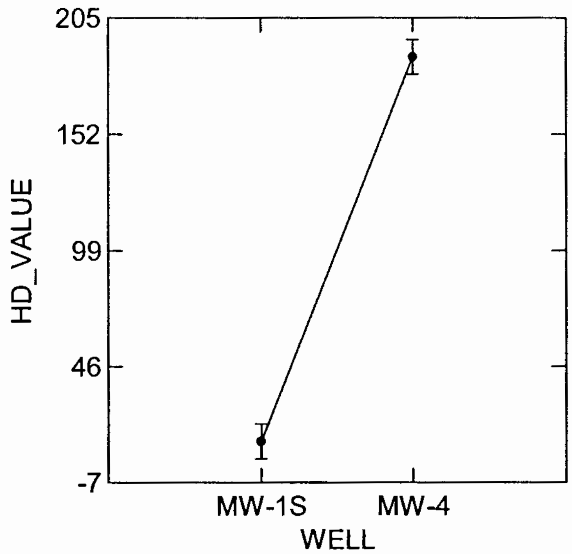
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Dep Var: HD_VALUE N: 104 Multiple R: 0.840 Squared multiple R: 0.705

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	799303.056	1	799303.056	243.571	(
Error	334722.961	102	3281.598		

Least Squares Means




```
*** WARNING ***
Case           358 is an outlier        (Studentized Residual =        3.804)

Durbin-Watson D Statistic          1.114
First Order Autocorrelation        0.443
COL/
ROW WELL$
  1  MW-1S
  2  MW-4
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 3281.598 with 102 df.
```

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	175.368	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

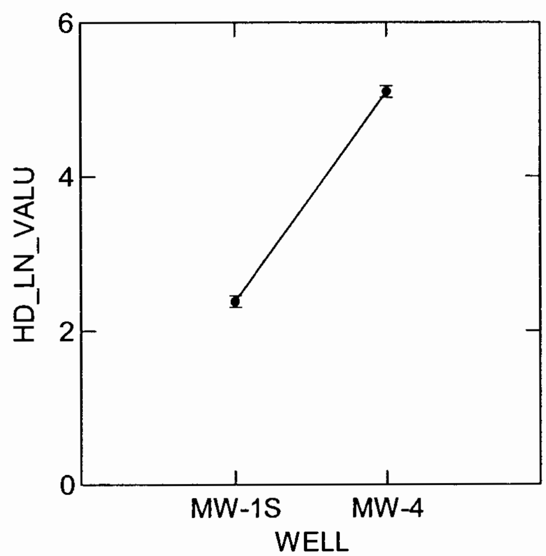
Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

```
Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-1S, MW-4

Dep Var: HD_LN_VALU   N: 104   Multiple R: 0.931   Squared multiple R: 0.866

Analysis of Variance
```

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	191.874	1	191.874	661.997	(
Error	29.564	102	0.290		

Least Squares Means




```
*** WARNING ***
Case          336 is an outlier       (Studentized Residual =       -3.742)
Case          712 is an outlier       (Studentized Residual =       -3.742)

Durbin-Watson D Statistic          1.477
First Order Autocorrelation        0.251
COL/
ROW WELL$
  1  MW-1S
  2  MW-4
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.290 with 102 df.

Matrix of pairwise mean differences:
```

	1	2
1	0.000	
2	2.717	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

IMPORT successfully completed.

881 cases and 6 variables processed and saved.

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-6B.SYD,
created Sat Mar 16, 2002 at 02:38:29, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

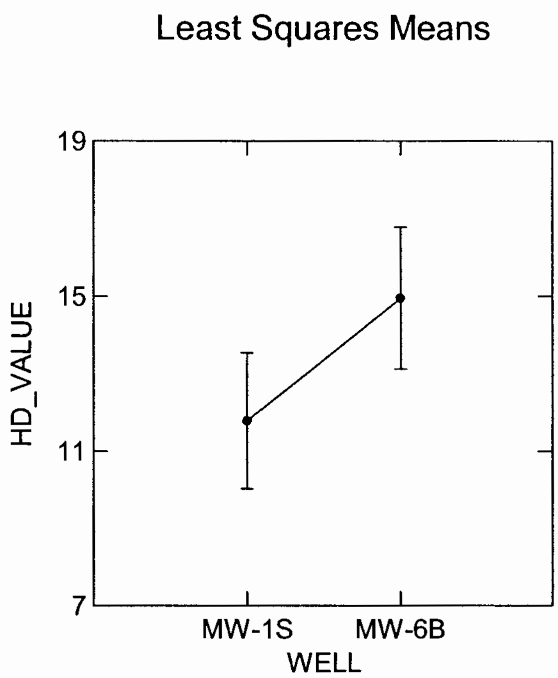
Effects coding used for categorical variables in model.

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Dep Var: HD_VALUE N: 98 Multiple R: 0.127 Squared multiple R: 0.016

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio
WELL$	246.096	1	246.096	1.564
Error	15104.745	96	157.341	




```
*** WARNING ***
Case          333 is an outlier        (Studentized Residual =        3.592)
Case          334 is an outlier        (Studentized Residual =        3.788)
Case          335 is an outlier        (Studentized Residual =        3.988)

Durbin-Watson D Statistic          0.531
First Order Autocorrelation        0.730
COL/
ROW WELL$
  1  MW-1S
  2  MW-6B
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 157.341 with 96 df.

Matrix of pairwise mean differences:
```

	1	2
1	0.000	
2	3.172	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.214	1.000

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

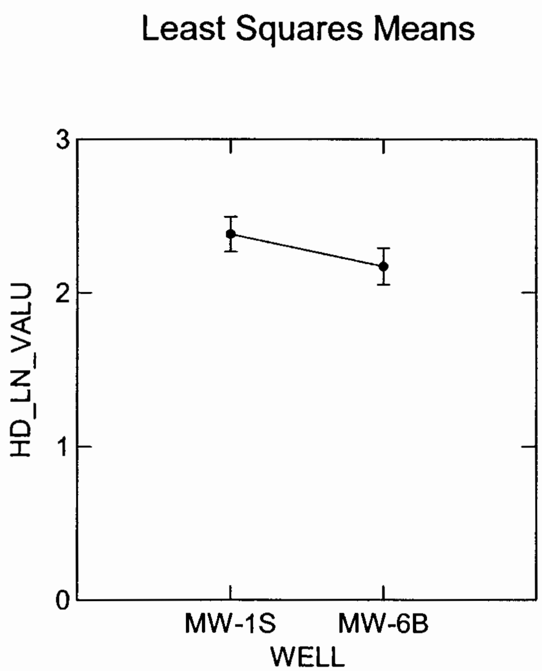
Effects coding used for categorical variables in model.

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Dep Var: HD_LN_VALU N: 98 Multiple R: 0.129 Squared multiple R: 0.017

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	1.082	1	1.082	1.624	(
Error	63.925	96	0.666		



Durbin-Watson D Statistic 0.835
First Order Autocorrelation 0.577
COL/
ROW WELL$
1 MW-1S
2 MW-6B
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.666 with 96 df.

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	-0.210	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.206	1.000

IMPORT successfully completed.

916 cases and 6 variables processed and saved.

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-7.SYD,
created Sat Mar 16, 2002 at 02:38:31, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

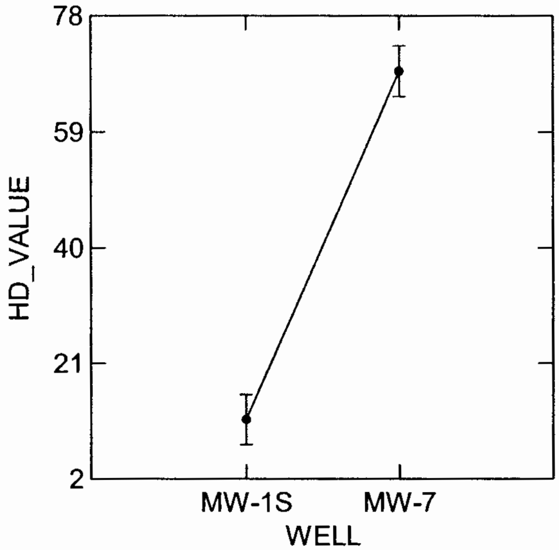
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Dep Var: HD_VALUE N: 102 Multiple R: 0.700 Squared multiple R: 0.490

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	83383.307	1	83383.307	96.034	(
Error	86827.202	100	868.272		

Least Squares Means




```
*** WARNING ***
Case          448 is an outlier        (Studentized Residual =        3.673)

Durbin-Watson D Statistic          1.464
First Order Autocorrelation        0.268
COL/
ROW WELL$
  1  MW-1S
  2  MW-7
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 868.272 with 100 df.
```

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	57.183	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

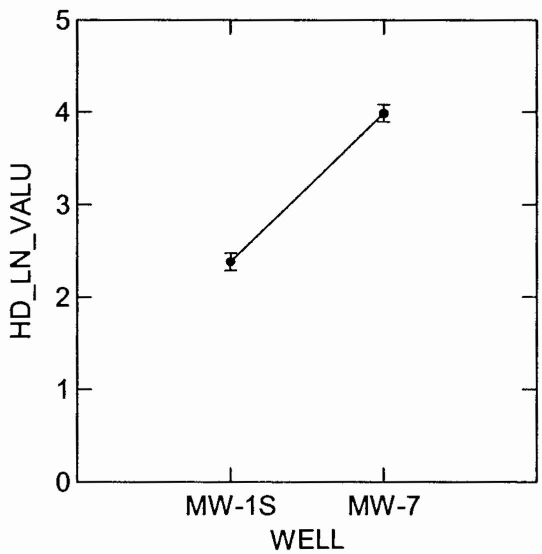
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Dep Var: HD_LN_VALU N: 102 Multiple R: 0.773 Squared multiple R: 0.598

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	65.725	1	65.725	148.716	(
Error	44.195	100	0.442		

Least Squares Means



*** WARNING ***
Case 336 is an outlier (Studentized Residual = -5.999)

Durbin-Watson D Statistic 1.716
First Order Autocorrelation 0.135
COL/
ROW WELL$
1 MW-1S
2 MW-7
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.442 with 100 df.

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	1.605	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

IMPORT successfully completed.

934 cases and 6 variables processed and saved.

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-9.SYD,
created Sat Mar 16, 2002 at 02:38:32, contains variables:

WELL$ PARAM_ID$ VALUE LN_VALUE HD_VALUE HD_LN_VALU

Data for the following results were selected according to:
(PARAM_ID$= "TCE")

Effects coding used for categorical variables in model.

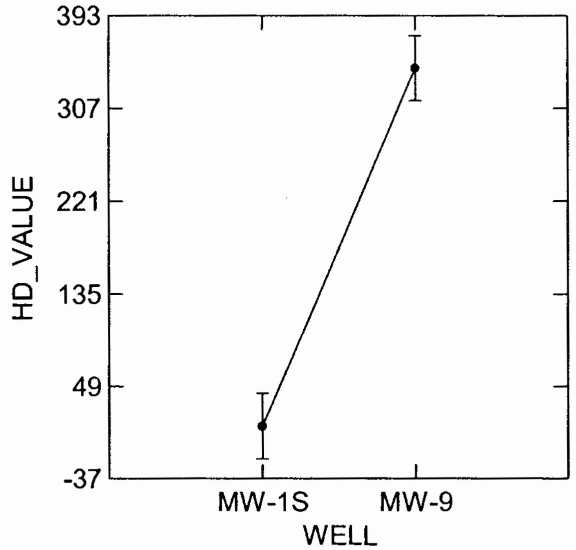
Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Dep Var: HD_VALUE N: 104 Multiple R: 0.608 Squared multiple R: 0.370

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	2873394.024	1	2873394.024	59.888	(
Error	4893934.923	102	47979.754		

Least Squares Means




```
*** WARNING ***
Case          359 is an outlier        (Studentized Residual =         3.693)
Case          694 is an outlier        (Studentized Residual =         4.871)
Case          712 is an outlier        (Studentized Residual =         4.263)

Durbin-Watson D Statistic          1.437
First Order Autocorrelation        0.282
COL/
ROW WELL$
  1  MW-1S
  2  MW-9
Using least squares means.
Post Hoc test of HD_VALUE
Using model MSE of 47979.754 with 102 df.
```

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	332.500	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

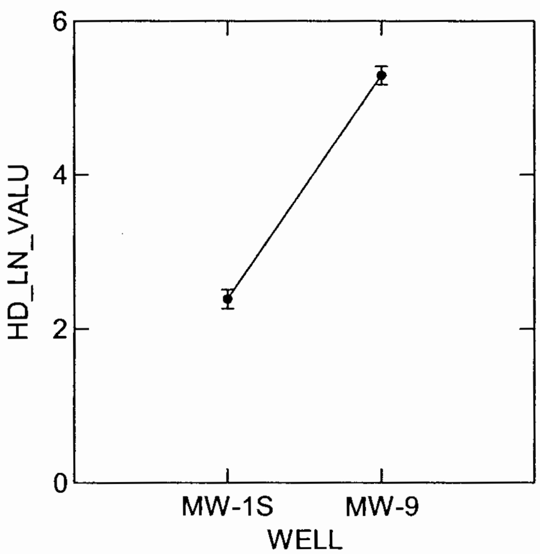
Data for the following results were selected according to:
(PARAM_ID$= "TCE")

```
Effects coding used for categorical variables in model.

Categorical values encountered during processing are:
WELL$ (2 levels)
   MW-1S, MW-9

Dep Var: HD_LN_VALU   N: 104   Multiple R: 0.859   Squared multiple R: 0.738
```

Analysis of Variance

Source	Sum-of-Squares	df	Mean-Square	F-ratio	I
WELL$	220.189	1	220.189	287.210	(
Error	78.198	102	0.767		

Least Squares Means




```
Durbin-Watson D Statistic          1.212
First Order Autocorrelation        0.390
COL/
ROW WELL$
  1  MW-1S
  2  MW-9
Using least squares means.
Post Hoc test of HD_LN_VALU
Using model MSE of 0.767 with 102 df.
```

Matrix of pairwise mean differences:

	1	2
1	0.000	
2	2.911	0.000

Tukey HSD Multiple Comparisons.

Matrix of pairwise comparison probabilities:

	1	2
1	1.000	
2	0.000	1.000

Appendix F-3
Parametric ANOVA Results

IMPORT successfully completed.

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-11.syd,
created Sat Mar 16, 2002 at 02:38:21, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	3161.000
MW-1S	51	2092.000

Mann-Whitney U test statistic = 1835.000
Probability is 0.000
Chi-square approximation = 14.432 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	2578.500
MW-1S	51	2674.500

Mann-Whitney U test statistic = 1252.500
Probability is 0.628
Chi-square approximation = 0.234 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	2694.000

MW-1S 51 2559.000
Mann-Whitney U test statistic = 1368.000
Probability is 0.618
Chi-square approximation = 0.249 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	3844.500
MW-1S	51	1408.500

Mann-Whitney U test statistic = 2518.500
Probability is 0.000
Chi-square approximation = 69.253 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	2581.000
MW-1S	51	2672.000

Mann-Whitney U test statistic = 1255.000
Probability is 0.691
Chi-square approximation = 0.158 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	3825.000
MW-1S	51	1428.000

Mann-Whitney U test statistic = 2499.000
Probability is 0.000
Chi-square approximation = 64.369 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	2645.000
MW-1S	51	2608.000

Mann-Whitney U test statistic = 1319.000
Probability is 0.855
Chi-square approximation = 0.033 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 100 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	50	3465.500
MW-1S	50	1584.500

Mann-Whitney U test statistic = 2190.500
Probability is 0.000
Chi-square approximation = 46.593 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-11, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-11	51	3610.500
MW-1S	51	1642.500

Mann-Whitney U test statistic = 2284.500
Probability is 0.000
Chi-square approximation = 45.046 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-14s.syd,
created Sat Mar 16, 2002 at 02:38:23, contains variables:

WELL$ PARAM_ID$ VALUE LN_VALUE HD_VALUE HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 94 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	43	2415.500
MW-1S	51	2049.500

Mann-Whitney U test statistic = 1469.500
Probability is 0.002
Chi-square approximation = 9.939 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 94 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	43	2110.500
MW-1S	51	2354.500

Mann-Whitney U test statistic = 1164.500
Probability is 0.418
Chi-square approximation = 0.656 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 94 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	43	2432.000
MW-1S	51	2033.000

Mann-Whitney U test statistic = 1486.000
Probability is 0.002
Chi-square approximation = 10.018 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 94 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	43	2817.000
MW-1S	51	1648.000

Mann-Whitney U test statistic = 1871.000
Probability is 0.000
Chi-square approximation = 37.685 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	44	2483.000
MW-1S	51	2077.000

Mann-Whitney U test statistic = 1493.000
Probability is 0.002
Chi-square approximation = 9.403 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 94 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	43	3104.000
MW-1S	51	1361.000

Mann-Whitney U test statistic = 2158.000
Probability is 0.000
Chi-square approximation = 64.945 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 94 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	43	2867.000
MW-1S	51	1598.000

Mann-Whitney U test statistic = 1921.000
Probability is 0.000
Chi-square approximation = 47.710 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 92 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	42	2388.000
MW-1S	50	1890.000

Mann-Whitney U test statistic = 1485.000
Probability is 0.000
Chi-square approximation = 16.417 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-14S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 94 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-14S	43	2509.500
MW-1S	51	1955.500

Mann-Whitney U test statistic = 1563.500
Probability is 0.000
Chi-square approximation = 14.009 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-15s.syd,
created Sat Mar 16, 2002 at 02:38:24, contains variables:

WELL$ PARAM_ID$ VALUE LN_VALUE HD_VALUE HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	44	2153.500
MW-1S	51	2406.500

Mann-Whitney U test statistic = 1163.500
Probability is 0.701

Chi-square approximation =   0.147 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	44	2238.500
MW-1S	51	2321.500

Mann-Whitney U test statistic =   1248.500
Probability is   0.137
Chi-square approximation =   2.213 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	44	2061.000
MW-1S	51	2499.000

Mann-Whitney U test statistic =   1071.000
Probability is   0.661
Chi-square approximation =   0.193 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	44	2527.500
MW-1S	51	2032.500

Mann-Whitney U test statistic =   1537.500
Probability is   0.001
Chi-square approximation =   11.380 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 96 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	45	2108.500
MW-1S	51	2547.500

Mann-Whitney U test statistic = 1073.500
Probability is 0.493
Chi-square approximation = 0.470 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	44	1424.000
MW-1S	51	3136.000

Mann-Whitney U test statistic = 434.000
Probability is 0.000
Chi-square approximation = 26.392 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	44	2331.500
MW-1S	51	2228.500

Mann-Whitney U test statistic = 1341.500
Probability is 0.024
Chi-square approximation = 5.090 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 93 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	43	2211.500

MW-1S 50 2159.500
Mann-Whitney U test statistic = 1265.500
Probability is 0.060
Chi-square approximation = 3.539 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-15S, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 95 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-15S	44	2287.000
MW-1S	51	2273.000

Mann-Whitney U test statistic = 1297.000
Probability is 0.155
Chi-square approximation = 2.019 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-16.syd,
created Sat Mar 16, 2002 at 02:38:25, contains variables:

WELL$ PARAM_ID$ VALUE LN_VALUE HD_VALUE HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	38	2220.500
MW-1S	51	1784.500

Mann-Whitney U test statistic = 1479.500
Probability is 0.000
Chi-square approximation = 21.400 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group Count Rank Sum

MW-16	38	1698.500
MW-1S	51	2306.500

Mann-Whitney U test statistic = 957.500
Probability is 0.855
Chi-square approximation = 0.033 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	38	1755.500
MW-1S	51	2249.500

Mann-Whitney U test statistic = 1014.500
Probability is 0.669
Chi-square approximation = 0.182 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	38	2499.000
MW-1S	51	1506.000

Mann-Whitney U test statistic = 1758.000
Probability is 0.000
Chi-square approximation = 46.449 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	38	1624.500
MW-1S	51	2380.500

Mann-Whitney U test statistic = 883.500
Probability is 0.356
Chi-square approximation = 0.851 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	38	2648.500
MW-1S	51	1356.500

Mann-Whitney U test statistic = 1907.500
Probability is 0.000
Chi-square approximation = 60.651 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	38	1709.500
MW-1S	51	2295.500

Mann-Whitney U test statistic = 968.500
Probability is 0.994
Chi-square approximation = 0.000 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 87 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	37	2201.500
MW-1S	50	1626.500

Mann-Whitney U test statistic = 1498.500
Probability is 0.000
Chi-square approximation = 30.397 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-16, MW-1S

Kruskal-Wallis One-Way Analysis of Variance for 89 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-16	38	2281.000
MW-1S	51	1724.000

Mann-Whitney U test statistic = 1540.000
Probability is 0.000
Chi-square approximation = 23.935 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-3.syd,
created Sat Mar 16, 2002 at 02:38:27, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2296.500
MW-3	51	2956.500

Mann-Whitney U test statistic = 970.500
Probability is 0.011
Chi-square approximation = 6.410 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2626.500
MW-3	51	2626.500

Mann-Whitney U test statistic = 1300.500
Probability is 1.000
Chi-square approximation = 0.000 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE

Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2698.500
MW-3	51	2554.500

Mann-Whitney U test statistic = 1372.500
Probability is 0.571
Chi-square approximation = 0.321 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1995.000
MW-3	51	3258.000

Mann-Whitney U test statistic = 669.000
Probability is 0.000
Chi-square approximation = 20.422 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 103 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2657.000
MW-3	52	2699.000

Mann-Whitney U test statistic = 1331.000
Probability is 0.966
Chi-square approximation = 0.002 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1563.500
MW-3	51	3689.500

Mann-Whitney U test statistic = 237.500
Probability is 0.000

Chi-square approximation = 50.660 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2554.500
MW-3	51	2698.500

Mann-Whitney U test statistic = 1228.500
Probability is 0.434
Chi-square approximation = 0.612 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 100 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	50	2018.000
MW-3	50	3032.000

Mann-Whitney U test statistic = 743.000
Probability is 0.000
Chi-square approximation = 17.828 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-3

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2189.000
MW-3	51	3064.000

Mann-Whitney U test statistic = 863.000
Probability is 0.002
Chi-square approximation = 9.722 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-4.syd,
created Sat Mar 16, 2002 at 02:38:28, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1695.500
MW-4	53	3764.500

Mann-Whitney U test statistic = 369.500
Probability is 0.000
Chi-square approximation = 44.493 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1352.500
MW-4	53	4107.500

Mann-Whitney U test statistic = 26.500
Probability is 0.000
Chi-square approximation = 80.325 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2438.500
MW-4	53	3021.500

Mann-Whitney U test statistic = 1112.500
Probability is 0.088
Chi-square approximation = 2.904 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:

WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1457.500
MW-4	53	4002.500

Mann-Whitney U test statistic = 131.500
Probability is 0.000
Chi-square approximation = 65.904 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1326.000
MW-4	53	4134.000

Mann-Whitney U test statistic = 0.000
Probability is 0.000
Chi-square approximation = 81.199 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1327.000
MW-4	53	4133.000

Mann-Whitney U test statistic = 1.000
Probability is 0.000
Chi-square approximation = 77.168 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group Count Rank Sum

MW-1S	51	1326.000
MW-4	53	4134.000

Mann-Whitney U test statistic = 0.000
Probability is 0.000
Chi-square approximation = 84.035 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	50	1489.000
MW-4	52	3764.000

Mann-Whitney U test statistic = 214.000
Probability is 0.000
Chi-square approximation = 59.094 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-4

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1406.500
MW-4	53	4053.500

Mann-Whitney U test statistic = 80.500
Probability is 0.000
Chi-square approximation = 70.570 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-6B.syd,
created Sat Mar 16, 2002 at 02:38:29, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 98 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2464.500
MW-6B	47	2386.500

Mann-Whitney U test statistic = 1138.500
Probability is 0.608
Chi-square approximation = 0.262 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 98 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2473.500
MW-6B	47	2377.500

Mann-Whitney U test statistic = 1147.500
Probability is 0.551
Chi-square approximation = 0.356 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 98 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2624.500
MW-6B	47	2226.500

Mann-Whitney U test statistic = 1298.500
Probability is 0.400
Chi-square approximation = 0.708 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 98 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2220.500
MW-6B	47	2630.500

Mann-Whitney U test statistic = 894.500
Probability is 0.017
Chi-square approximation = 5.678 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 99 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2664.000
MW-6B	48	2286.000

Mann-Whitney U test statistic = 1338.000
Probability is 0.308
Chi-square approximation = 1.039 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 98 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2803.500
MW-6B	47	2047.500

Mann-Whitney U test statistic = 1477.500
Probability is 0.047
Chi-square approximation = 3.940 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 98 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2311.000
MW-6B	47	2540.000

Mann-Whitney U test statistic = 985.000
Probability is 0.028
Chi-square approximation = 4.843 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 96 cases

Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	50	2186.500
MW-6B	46	2469.500

Mann-Whitney U test statistic = 911.500
Probability is 0.035
Chi-square approximation = 4.439 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-6B

Kruskal-Wallis One-Way Analysis of Variance for 98 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2364.000
MW-6B	47	2487.000

Mann-Whitney U test statistic = 1038.000
Probability is 0.203
Chi-square approximation = 1.622 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-7.syd,
created Sat Mar 16, 2002 at 02:38:31, contains variables:

WELL$	PARAM_ID$	VALUE	LN_VALUE	HD_VALUE	HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2191.000
MW-7	51	3062.000

Mann-Whitney U test statistic = 865.000
Probability is 0.001
Chi-square approximation = 10.290 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2533.000
MW-7	51	2720.000

Mann-Whitney U test statistic = 1207.000
Probability is 0.345
Chi-square approximation = 0.890 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2273.000
MW-7	51	2980.000

Mann-Whitney U test statistic = 947.000
Probability is 0.011
Chi-square approximation = 6.523 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2097.500
MW-7	51	3155.500

Mann-Whitney U test statistic = 771.500
Probability is 0.000
Chi-square approximation = 14.726 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2672.500
MW-7	51	2580.500

Mann-Whitney U test statistic = 1346.500
Probability is 0.695
Chi-square approximation = 0.154 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1398.000
MW-7	51	3855.000

Mann-Whitney U test statistic = 72.000
Probability is 0.000
Chi-square approximation = 67.642 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2483.000
MW-7	51	2770.000

Mann-Whitney U test statistic = 1157.000
Probability is 0.148
Chi-square approximation = 2.090 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 100 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	50	2137.000
MW-7	50	2913.000

Mann-Whitney U test statistic = 862.000
Probability is 0.001
Chi-square approximation = 11.421 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:

WELL$ (2 levels)
MW-1S, MW-7

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2391.000
MW-7	51	2862.000

Mann-Whitney U test statistic = 1065.000
Probability is 0.084
Chi-square approximation = 2.978 with 1 df

SYSTAT Rectangular file C:\CDM\Phibro\Jan02\1-9.syd,
created Sat Mar 16, 2002 at 02:38:32, contains variables:

WELL$ PARAM_ID$ VALUE LN_VALUE HD_VALUE HD_LN_VALU

The following results are for:
PARAM_ID$ = BEN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1724.000
MW-9	53	3736.000

Mann-Whitney U test statistic = 398.000
Probability is 0.000
Chi-square approximation = 41.514 with 1 df

The following results are for:
PARAM_ID$ = CD

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2634.000
MW-9	53	2826.000

Mann-Whitney U test statistic = 1308.000
Probability is 0.652
Chi-square approximation = 0.203 with 1 df

The following results are for:
PARAM_ID$ = CU

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2731.000
MW-9	53	2729.000

Mann-Whitney U test statistic = 1405.000
Probability is 0.687
Chi-square approximation = 0.162 with 1 df

The following results are for:
PARAM_ID$ = EBN

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1580.500
MW-9	53	3879.500

Mann-Whitney U test statistic = 254.500
Probability is 0.000
Chi-square approximation = 53.739 with 1 df

The following results are for:
PARAM_ID$ = HCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2241.500
MW-9	53	3218.500

Mann-Whitney U test statistic = 915.500
Probability is 0.001
Chi-square approximation = 10.809 with 1 df

The following results are for:
PARAM_ID$ = TCE

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1335.500
MW-9	53	4124.500

Mann-Whitney U test statistic = 9.500
Probability is 0.000
Chi-square approximation = 76.184 with 1 df

The following results are for:
PARAM_ID$ = TCR

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	2141.000
MW-9	53	3319.000

Mann-Whitney U test statistic = 815.000
Probability is 0.000
Chi-square approximation = 18.213 with 1 df

The following results are for:
PARAM_ID$ = TOL

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 102 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	50	1564.000
MW-9	52	3689.000

Mann-Whitney U test statistic = 289.000
Probability is 0.000
Chi-square approximation = 51.583 with 1 df

The following results are for:
PARAM_ID$ = TX

Categorical values encountered during processing are:
WELL$ (2 levels)
MW-1S, MW-9

Kruskal-Wallis One-Way Analysis of Variance for 104 cases
Dependent variable is VALUE
Grouping variable is WELL$

Group	Count	Rank Sum
MW-1S	51	1676.500
MW-9	53	3783.500

Mann-Whitney U test statistic = 350.500
Probability is 0.000
Chi-square approximation = 44.800 with 1 df